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Continuation only in this number—pages 111–

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EDITORIAL.

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times longer than the bract, bibracteolate close to the base; corolla orbicular, 2–2½″ high, shortly urceolate, with broad, reflexed lobes; stamens 10, anthers comparatively large, as long as the appendages filaments short, densely bearded at base; style about twice the length of the ovary, included, or slightly exsert; ovary densely tomentose at the summit; fr orbicular, 2–3″ broad, with a smooth, thin pericarp & scanty pulp, becoming wrinkled at maturity, enclosing 5 easily separated nutlets, nearly equal in size, & 2-celled by a partition from the ventral suture, occasionally both cells fertile or more or less abortive."—Parry Dav ac pr 4 36–37. Or j A salicifolia.

BRYANTHUS BREWERI A. Gray.

Genus RHODODENDRON Linnaeus.

RHODODENDRON OCCIDENTALE A G

Azalea, 2–6° high, mts above 5000°, d

Genus PYROLA Tournefort.

PYROLA APHYLLA Smith.

PYROLA PICTA Smith.

Genus SARCODES Torrey.

SARCODES SANGUINEA Torr.

PTEROSPERA ANDROMEDEA Nutt.

PLUMBAGINACEAE.

Genus STATICE Linnaeus.

STATICE LIMONIUM Linn.

v californica G da 11

LENNOACEAE

Genus PHOLISMA Nuttall.

PHOLISMA ARENARIUM Nutt.

PHOLISMA DEPRESSUM Greene.

"Stems solitary, completely covered by the rhombic-ovate, or sometimes oblong, closely imbricated scales, fls in a depressed, barely convex head, an inch or 2 broad: sepals 6, linear-filiform, minutely glandular ciliolate: corolla tubular-funnelform, 6-lobed, lilac-p: stamens shorter & style longer than in P. arenarium."—Ge ca ac b 1 198 j

Genus AMMOBROMA Torrey.

AMMOBROMA SONORAE Torr.

PRIMULACEAE.

Genus DODECATHEON. Linnaeus.

DODECATHEON CLEVELANDI Greene

"A foot or 2 high, pale green & glandular: new roots formed not at the end of the dry season but at its beginning, remaining dormant through the summer, no tubers formed either originally or by root-metamorphosis: leaves scarcely fleshy not depressed but ascending or erect, spatulate-obovate, the margins erose: fls 5-merous: corolla bright-p with a y base & some dark-p spots next the androecium: androecium about 3‴ long, filaments connate, the tube dark-p, the ornate exterior of each filament changing to y at the base of the anther & continued up the back of it nearly to the apex in a lanceolate form & lying in irregular folds; anthers otherwise p, not quite twice the length of the stamineal tude, slightly divergent around the moderately exserted pistil, retuse at the rather blunt apex: capsule oblong, circumscissile at top: seeds reddish-brown, somewhat cubical, the testa sinuously reticulate."—Ge pitt 1 214 Or s j da 11. Or W 7 128 (& v alba & splendens), giant cyclamen, shooting star.

DODECATHEON ELLIPTICUM Nutt.

DODECATHEON HENDERSONI A. G.

DODECATHEON JEFFREYI Moore.

Ge ca ac b 1 406 sz; pitt 1 210, 214.

These are mostly considered as forms of one species—the D. Meadia of Linn.

Genus ANAGALLIS Tournefort.

ANAGALIS ARVENSIS Linn.

Poor man's weather glass da 11, Or j

Genus SAMOLUS Linnaeus.

SAMOLUS VALERANDI Linn.

v americana G da 11 Ge ca ac b 1 406

Genus CENTUNCULUS Linnaeus.

CENTUNCULUS MINIMUS Linn.

Genus GLAUX Linnaeus.

G. maritima L. Sea-milkwort, in saline soil round the northern hemisphere.

STYRACEAE.

Genus STYRAX Tournefort.

STYRAX CALIFORNICA Torr.

OLEACEAE.

Genus MENODORA Humb. & Bonpl.

MENODORA SCABRA A. Gray.
MENDORA SCOPARIA Engelm.

Genus FRAXINUS Tournefort.

FRAXINUS DIPETALA H. & A.
Flowering ash. j da 11
F OREGANA Nutt. da 11

APOCYNACEAE.

Genus APOCYNUM Tournefort.

APOCYNUM CANNABINUM L.
Apocynum Cannabinum L.—Indian hemp possesses diuretic, cathartic, emetic and diaphoretic properties. Of wide distribution, from Oregon to Baja California, eastward to the Atlantic. A very useful remedy in many diseases, sometimes called American Ipecac.

Apocynum androsasemifolium L.—Of equally wide distribution as the last, with similar medical properties.

ASCLEPIADACEAE.

Genus PHILIBERTELLA Vail.

"Calyx small, 5-parted, the lobes acute; corolla campanulate or rotate, deeply 5-parted, the lobes acute or obtuse, with a shallow entire or undulate ring forming an outer crown in its throat, the inner or stamineal crown consisting of 5 turgid fleshy or hard scales, or flattish appendages, attached in a circle at the base of the sessile or slightly stalked gynostegium (column), forming a hollow entire or undulate spreading surface near the level of the conical stigmas; follicles naked, slender, attenuate at both ends or obtuse at the base. Twining herbs, or partly shrubby plants, of warm regions, with opposite glabrous pubescent or woolly leaves & umbellate sometimes fragrant & showy fls."—Anna Murray Vail Torr cl b 24 305 (Je 1897).

P HARTWEGII Vail lc
var heterophylla Vail
P. HIRTELLA Vail

Genus ASCLEPIAS Linnaeus.

ASCLEPIAS SUBULATA Decsne.
Asclepias Subulata Decsne.—"Jumete" is a very powerful cathartic, equal in activity to croton oil. The Indians are said to use it in cases of syphillis after all other remedies fail to bring relief; an overdose often resulting in incurable insanity or death. In Mexico the juice of this or a similar plant is said to be often used in cases of enmity, the victim of the insidious drug becoming insane for life if not mercifully relieved at once by death. Tradition says that Maximilian's unfortunate empress, Carlotta, was a victim of this drug, but the truth of this may never be known.

ASCLEPIAS ALBICANS S. Watson.
Asclepias Albicans Watson.—A larger species of jumete, from the Colorado desert and adjacent regions in Baja California, is credited popularly with the same powerful cathartic properties as the last.

ASCLEPIAS ERIOCARPA Benth.
ASCLEPIAS EROSA Torr.
ASCLEPIAS MEXICANA Cav.
ASCLEPIAS VESTITA H. & A.

ASTEPHANUS UTAHENSIS Engelm.

Genus GOMPHOCARPUS R. Brown.

GOMPHOCARPUS TOMENTOSUS A. G.

Genus SARCOSTEMMA R. Brown.

S heterophyllum E is Philibertia linearis heterophylla fide G

PHILIBERTIA TORREYI A. Gray.

GENTIANACEAE.

Genus ERYTHRAEA Pers.

ERYTHRAEA DOUGLASII A. Gray.
Erythraea Douglasii Gray.—"It contains a bitter, tonic principle, valued for malarial diseases, and known as 'conchalagua,'" (Mrs. Bingham) in common with other plants of the order Gentianaceae.

ERYTHRAEA MUHLENBERGII Griseb.

ERYTHRAEA VENUSTA A. Gray.
Erythraea venusta Gray.—This is the common "canchalagua" of Southern and Baja California, which grows luxuriantly and abundantly in wet seasons and is usually gathered and kept con-

stantly in store by many Mexican and Indian families. The following letter, published in the West American Scientist (VI. 84) will here be found of interest as giving some reliable information regarding this and other native plants possessing medicinal virtue:

Editor of the West American Scientist—We beg to acknowledge receipt of your favor, and in reply thereto, we beg to state as follows: Conchalagua is, as you mention, the Erythraea venustia Gray, but more popularly known as California Centaury, Californian Pink, etc.

Medicinally it possesses valuable antiseptic and febrifuge properties, and is in high repute as a bitter tonic and stomachic, but we see no reason for considering it to be the "August Flower" so extensively advertised. (We have been informed that such was the case.—Editor.)

In regard to the other plant mentioned by you, Golondrina, we find that several species of Euphorbia, mostly the E. albomarginata, Torr. & Gray, and the E. prostata, Ait., have acquired a reputation as an'idotes for snake poisoning, under the names of "Golondrina" and "Gollindrinera." (E. polycarpa, Benth., is the common Golondrina of the Mexicans of Southern and Lower California.—Editor.)

The latter name has been applied also to the Chelidonium majus, Linne, and the Euphorbia maculata, Linne, is known in some districts as Golondrina de Filipinas, or Gatas-Gatas de Filipinas. In the case of these last two plants, however, we find no record of their having been employed as snakebite remedies.

Larrea Mexicana, Moricand, is popularly known as the creosote-bush or stinkweed, and is credited with being possessed of valuable properties for the treatment of rheumatism and syphilitic diseases. Trusting that the above will be of interest, we are, very truly yours,

PARKE, DAVIS & CO.

Genus FRASERA Walter.

FRASERA PARRYI Torr.
FRASERA NITIDA Benth.

EUSTOMA EXALTATUM Griseb.

POLEMONIACEAE.

Genus POLEMONIUM Tournefort.

P confertum G Nevada, &c

Genus PHLOX Linnaeus.

PHLOX DOUGLASII Hook.
PHLOX LONGIFOLIA Nutt.
PHLOX NANA Nutt.
P gracilis Hook da 11
P dolicantha G Parish 1838
PHLOX SPECIOSA Pursh.
V congesta G Parish 1839
P canescens T-G Parish 1617 b mts

Genus LOESELIA Linnaeus.

LOESELIA EFFUSA A. Gray.
LOESELIA GUTTATA A. Gray.
LOESELIA TENUIFOLIA A. Gray.

Loeselia tenuifolia Gray.—This herb is credited with valuable medicinal properties, being held in high repute by Indians and Mexicans for fevers and in other diseases. Some Mexicans once informed me however, according to my field notes, that it is a virulent poison 'used only in venereal diseases.' Without some actual knowledge of the properties of a plant it should be experimented upon with exceeding caution.

Genus COLLOMIA Nuttall.

COLLOMIA GRACILIS Dougl.
COLLOMIA GRANDIFLORA Dougl.
COLLOMIA HETEROPHYLLA Hook.

Genus GILIA Ruiz & Pavon.

GILIA ACHILLEAEFOLIA Benth.
GILIA ANDROSACEA Stend.
GILIA AUREA Nutt.
GILIA BELLA A. Gray.
GILIA BIGELOVII A. Gray.
GILIA BREVICULA A. Gray.
GILIA CALIFORNICA Benth.
GILIA CAPITATA Dougl.
GILIA CILIATA Bentham:
GILIA DEMISSA A. Gray.
GILIA DENSIFOLIA Benth.
GILIA DIANTHOIDES Endl.
GILIA FILIFOLIA Nutt.
GILIA FLOCCOSA A. Gray.
GILIA FLORIBUNDA A. Gray.
GILIA INCONSPICUA Dougl.
GILIA LATIFOLIA S. Watson.
GILIA LATIFLORA A. Gray.
GILIA LAXA Vasey & Rese.
GILIA LEMMONI Gray.
GILIA LINIFLORA Benth.
GILIA MICRANTHA Stend.
GILIA MULTICAULIS Benth.
GILIA NEVINII A. Gray.
GILIA ORCUTTII. Parry.

"A span high, slender; leaves only 2 or 3 pairs up to the nflorescence, very small, with filiform divisions; fl. few, in the clusters; tube of the corolla less than ½' long, rather thick, dilated at summit, hardly longer than the turbinate campanulate throat and limb, its lobes ovate;

stamens and style included."—Parry. Proc. Dav. Acad. Natl. Sci. iv. 40 (1884).
GILIA PARRYAE A. Gray.
GILIA PUNGENS Benth.
GILIA SESSEI Don.
GILIA TENELLA Benth.
GILIA TENUIFLORA Benth.
GILIA VIRGATA Stend.

NAVARRETIA FOLIACEA Greene.

"Near N. atractyloides, but more diffuse and leafy, leaves ampler, less coriaceous and of a lighter green, their segments not wholly spinose, but herbaceous below; segments of the calyx very unequal, 2 large, ovate-acuminate spinose tipped and more or less recurved, 3 very small and only broadly subulate: corolla white, small. little surpassing the calyx: herbage scentless."—Greene, Pittonia, i, 138 (N 25. 1887). Potrero, San Diego county, al. (D. Cleveland).

NAVARRETIA PENINSULARIS Greene.

"Diffusely branching. 3–10′ high, glandular-puberulent and very viscid: leaves all acerose-pinnatifid: fls. rather few, in numerous scattered and mostly pedunculate glomerules: calyx sparsely hirsute, the segments subu ate, entire, very un equal, the shortest fully equalling the tube the longest surpassed by the purplish corolla: capsule 3 celled, many-seeded. Hanson's ranch, in the northern part of Lower California, July 10, 1884, C. R. Orcutt, No. 1113 Related to N divaricata, but sufficiently distin guished by its clamminess and different inflorescence, as well as by its larger corollas."—Greene, Pittonia, i 136.

NAVARRETIA HAMATA Greene.

"Near N atractyloides, and like it aromatic, but smaller and comparatively slender; leaves not ioliaceous-dilated, but with a linear, or nearly linear rachis and few or many spinose-subulate segments of which the terminal one, and sometimes one or all of the lateral pairs are strongly recurved or else abruptly deflexed (forming hooks); calyx-segments all subulate and spinose-tipped, all erect, 2 twice as large as the others: corolla salverform, deep purple, large for the plant, the slender tube well exserted from the calyx. Guadalupe mt., Lower California, June, 1883, C. R. Orcutt. Also at All Saints bay, May, 1885 by the present writer."—Greene, Pit. i. 139 (N 25, 1887).

NAVARRETIA ATRACTYLOIDES Gne.
NAVARRETIA DIVARICATA Greene.
NAVARRETIA PROSTRATA Greene.
NAVARRETIA VISCIDULA Greene.

HYDROPHYLLACEAE.

LEMMONIA CALIFORNICA A. Gray.

Genus NEMOPHILA Nuttall.

NEMOPHILA AURITA Lindl.
NEMOPHILA INSIGNIS Dougl.
NEMOPHILA MENZIESII H. & A.
NEMOPHILA RACEMOSA Nutt.

Genus ELLISIA Linnaeus.

ELLISIA CHRYSANTHEMIFOLIA Bth
ELLISIA MEMBRANACEA Benth.

Genus PHACELIA Juss.

PHACELIA AFFINIS A. Gray.
PHACELIA CAMPANULARIA A. Gray.
PHACELIA CILIATA Benth.
PHACELIA CIRCINATA Jacq. f.
PHACELIA CORDIFOLIA S. Watson.
PHACELIA CURVIPES Torr.
PHACELIA DAVIDSONII A. Gray.
PHACELIA DISTANS A. Gray.
PHACELIA DOUGLASII Torr.
PHACELIA FREMONTII Torr.
PHACELIA GRANDIFLORA A. Gray.
PHACELIA HETEROSPERMA Parish.
PHACELIA HISPIDA A. Gray.
PHACELIA IXODES Kellogg.
PHACELIA IVESIANA Torr.
PHACELIA LEUCANTHA Lemmon.
PHACELIA MICRANTHA Torr.
PHACELIA MOHAVENSIS A. Gray.
PHACELIA ORCUTTIANA A. Gray.
PHACELIA PARRYI Torr.
PHACELIA RAMOSISSIMA Dougl.
PHACELIA RUGULOSA Lemmon.
PHACELIA SUFFRUTESCENS Parry.
PHACELIA TANACETIFOLIA Benth.
PHACELIA VISCIDA Torr.
PHACELIA WHITLAVIA A. Gray.

Genus EMMENANTHE Bentham.

EMMENANTHE PENDULIFLORA Bth.

Genus TRICARDIA Torrey.

TRICARDIA WATSONI Torr.

Genus NAMA Linnaeus.

NAMA DEMISSUM A. Gray.
NAMA HISPIDUM A. Gray.
NAMA PARRYI A. Gray.
NAMA ROTHROCKII A. Gray.
NAMA STENOCARPUM A. Gray.

Genus ERIODICTYON Bentham.

ERIODICTYON ANGUSTIFOLIUM Nt.
ERIODICTYON CRASSIFOLIUM Benth.

"Densely tomentose-villous, the hairs straight: corolla salver-form, twice as long as the calyx, densely villous outside: seed finely about 10-striate, with innumerable minute transverse lines."—Greene, Bull. Cal. Acad. Sci., i. 201.

ERIODICTYON GLUTINOSUM Benth.

Eriodictyon Glutinosum Bentham.—"Infusion of the balsamic-resiniferous leaves in spirit used as a tonic" (Watson, Bot., Cal., i:518). This and E. angustifolium Nuttall are probably identical. The species is very variable. These shrubs are abundant in the hills and mountains of Southern and Baja California, and held in about equal repute as remedial agents by the Mexi-

cans who do not seem to distinguish between them. E. sessilifolium Greene, of the vicinity of Todos Santos bay, Lower California, is also known by the same name and credited with the same virtues. This seems to be a form connecting E. glutinosum and E. angustifolium with E. crassifolium.

ERIODICTYON SESSILIFOLIUM Grne.

Ge ca ac b 1:201. Br Zoe 4:208 j only.

E intermedia Parry ined. Or 77 j

ERIODICTYON TOMENTOSUM Benth.

H. C. Ford gives the San Rafael mountains as the habitat of this species. Mrs. Bingham says: "Found on the banks of mountain streams, and used for lung diseases, but especially for diseases of the mucous membrane of the throat. The Yerba Santa of the Californians." It should be remarked here, that the shrub Mrs. Bingham refers to, is not the beautiful shrub with velvety foliage found around San Diego and referred to E. tomentosum by Watson. The San Diego shrub is referred to E. crassifolium Bentham (fide Greene), and is not known to possess any medicinal properties. The Yerba Santa of the Mexicans commonly referred to as possessing medical properties, is E. glutinosum.

Genus HESPEROCHIRON S. Watson.

HESPEROCHIRON NANUS Greene.

BORRAGINACEAE.

Genus COLDENIA Linnaeus.

COLDENIA CANESCENS D. C.
COLDENIA PALMERI A. Gray.

Genus HELIOTROPIUM Tournefort.

HELIOTROPIUM CURASSAVICUM Lin.

Genus AMSINCKIA Lehm.

AMSINCKIA ECHINATA A. Gray.

A lycopsoides Lehm da 12

AMSINCKIA INTERMEDIA F. & M.

Fl chrome y, with orange spots at the base of the divisions of the corolla. sz j

AMSINCKIA TESSELLATA A. Gray.
AMSINCKIA SPECTABILIS F. & M.

PLAGIOBOTHRYS CANESCENS A. G.
PLAGIOBOTHRYS NOTHOFULVUS

KRYNITZKIA ANGUSTIFOLIA A. Gray
KRYNITZKIA BARBIGERA A. Gray.
KRYNITZKIA CIRCUMSCISSA A. Gray.
KRYNITZKIA COOPERI A. Gray.
KRYNITZKIA FOLIOSA Greene.
KRYNITZKIA INTERMEDIA A. Gray.
KRYNITZKIA JONESII A. Gray.
KRYNITZKIA LEIOCARPA F. & M.
KRYNITZKIA MARITIMA Greene.
KRYNITZKIA MICROMERIS A. Gray.
KRYNITZKIA MOHAVENSIS Greene.
KRYNITZKIA MURICATA A. Gray.
KRYNITZKIA OXYCARYA A. Gray.
KRYNITZKIA OXYGONA A. Gray.
KRYNITZKIA PTEROCARYA A. Gray.
KRYNITZKIA RAMOSISSIMA A. Gray.
KRYNITZKIA TORREYANUM A. Gry.

Genus PECTOCARYA De Candolle.

PECTOCARYA LINEARIS D. C.
PE .. PENICILLATA A. D. C.
PECTOCARYA SETOSA A. Gray.

Genus HARPAGONELLA A. Gray.

HARPAGONELLA PALMERI A. Gray.

ECHINOSPERMUM GREENEI A. Gray.

CONVOLVULACEAE.

Genus CONVOLVULUS Linnaeus.

CONVOLVULUS ARVENSIS Linn.
CONVOLVULUS CALIFORNICA Choisy.
CONVOLVULUS LONGIPES S. Watson.
CONVOLVULUS LUTEOLUS A. Gray.
CONVOLVULUS OCCIDENTALIS Gray
CONVOLVULUS PENTAPETALOIDES
CONVOLVULUS SEPIUM Linn.
CONVOLVULUS SOLDANELLA Linn.

Genus CRESSA Linnaeus.

CRESSA CRETICA Linn.

Genus CUSCUTA Tournefort.

CUSCUTA CALIFORNICA Choisy.
CUSCUTA DECORA CHOISY.
CUSCUTA SALINA Engelm.
CUSCUTA SUBINCLUSA D. & H.

DICHONDRA REPENS Forst.

SOLANACEAE.

Genus SOLANUM Tournefort.

SOLANUM DOUGLASII Dunal.
SOLANUM NIGRUM Linn.
SOLANUM PALMERI Vasey & Rose.
SOLANUM XANTI A. Gray.

Genus PHYSALIS Linnaeus.

PHYSALIS AEQUATA Jacq. f.
PHYSALIS CRASOIFOLIA Benth.
PHYSALIS MURICULATA Greene.
PHYSALIS PEDUNCULATA Greene.
PHYSALIS PUBESCENS Linn.

Genus LYCIUM Linnaeus.

LYCIUM ANDERSONII A. Gray.
LYCIUM CALIFORNICUM Nutt.
LYCIUM HASSEI Greene.
LYCIUM PUBERULUM A. Gray.
LYCIUM RICHII A. Gray.
LYCIUM TORREYI A. Gray.

Genus DATURA Linnaeus.

DATURA METELOIDES DC.
D discolor Or 2190 j

Genus PETUNIA Juss.

P parviflora Juss j, da 12

Genus NICOTIANA Tournefort

NICOTIANA BIGELOVII S. Watson.
N trigonophylla Dunal Or e
N attenuata Torrey
NICOTIANA CLEVELANDI A. Gray.

Nicotiana Glauca L.—"The large, glaucous, thickish leaves are used as healing and anodine poultices." (Harvard).

SCROPHULARIACEAE.

Genus LINARIA Tournefort.

LINARIA CANADENSIS Dum.

Genus ANTIRRHINUM Tournefort.

ANTIRRHINUM COULTERIANUM Bth.
ANTIRRHINUM FILIPES A. Gray.
ANTIRRHINUM GLANDULOSUM Lnl.
ANTIRRHINUM JUNCEUM A. Gray.
ANTIRRHINUM NEVINIANUM A. Gray
ANTIRRHINUM NUTTALLIANUM Bh.
ANTIRRHINUM ORCUTTIANUM A. G
ANTIRRHINUM SPECIOSUM A. Gray.
ANTIRRHINUM STRICTUM A. Gray.

Or d. da 12. Ge ca ac b 1:122, 409; sz.

ANTIRRHINUM SUBSESSILE A. Gray
ANTIRRHINUM WATSONI Vasey-Rose

Genus MOHAVEA A. Gray.

MOHAVEA VISCIDA A. Gray.

Genus SCROPHULARIA Tournefort.

SCROPHULARIA CALIFORNICA Chn.

Genus COLLINSIA Nuttall.

COLLINSIA BARTSIAEFOLIA Benth.
C childsii Py da 12
C parviflora Or d
COLLINSIA BICOLOR Benth.

Auridula-p fls, upper divisions of corolla white tinged with rose & auricula-p spots at the center. Or d j
COLLINSIA PARRYI A. Gray.

Genus PENTSTEMON Mitchell.

PENTSTEMON AMBIGUUS Torr.
PENTSTEMON ANTIRRHINOIDES Bh.
P azureus Benth da 13
PENTSTEMON BARBATUS Nutt.
V labrosus G da 13
P cæsiusG
PENTSTEMON CENTRANTHIFOLIUS
PENTSTEMON CERROSENSIS Kelg.
PENTSTEMON CLEVELANDI A. Gray
PENTSTEMON CORDIFOLIUS Benth.
PENTSTEMON EATONI A. Gray.
PENTSTEMON GLABER Pursh.
PENTSTEMON HETEROPHYLLUS Ln.
P laetus G da 13
PENTSTEMON PALMERI A. Gray.
PENTSTEMON PARISHII A. Gray.
PENTSTEMON PARRYI A. Gray.
PENTSTEMON PUMILUS Nutt.
PENTSTEMON ROTHROCKII Gray.
PENTSTEMON SPECTABILIS Thurber
PENTSTEMON TERNATUS Torr.

Genus PEDICULARIS Tournefort.

PEDICULARIS DENSIFLORA BENTH

Lousewort, pomegranate-p fls & bracts with y lips. Or d
PEDICULARIS SEMIBARBATUS A. G.

MIMETANTHA PILOSA Greene.

Genus MIMULUS Linnaeus.

MIMULUS BREVIPES Benth.
M bigelovii G da 13
MIMULUS CARDINALIS Dougl.
MIMULUS EXIGUUS A. Gray.
MIMULUS FLORIBUNDUS Dougl.
MIMULUS FREMONTI A. Gray.
MIMULUS INCONSPICUUS A. Gray.
MIMULUS LATIFOLIUS A. Gray.
MIMULUS LUTEUS Linn.
MIMULUS MOHAVENSIS Lemmon.
MIMULUS MOSCHATUS Dougl.
MIMULUS NANUS Hook & Arn.
MIMULUS NASUTUS Greene.
MIMULUS PALMERI A. Gray.
MIMULUS PARISHII Greene.

"Stout, 2° high, villous and very slimy; leaves ovate-lanceolate, erose-dentate 1-2' long, the uppermost clasping: pedicels shorter than the leaves: calyx-teeth triangular, acute, nearly equal: corolla pale rose-red, only the small, nearly regular limb exserted from the calyx: seed small oblong, with a loose, wrinkled coat."—Greene, Bull. Cal. Acad. Sci., i. 108-9 (Mar. 7, 1885).

DIPLACUS GLUTINOSUS Nutt.

Mimulus glutinosus Wendl.—The infusion of the leaves of this and related forms (treated as species of Diplacus by some botanists) is considered a specific by some for dysentery.

DIPLACUS GRANDIFLORUS Greene.
DIPLACUS LATIFOLIUS Nutt.
DIPLACUS LINEARIS Greene.
DIPLACUS LONGIFLORUS Nutt.
DIPLACUS PUNICEUS Nutt.
DIPLACUS STELLATUS Kellogg.

Genus STEMODIA Linnaeus.

STEMODIA DURANTIFOLIA Swartz.

Genus LIMOSELLA Linnaeus.

LIMOSELLA AQUATICA Linn.

Genus VERONICA Linnaeus.

VERONICA ALPINA Linn.
VERONICA AMERICANA Schw.
VERONICA PEREGRINA Linn.

Genus CASTILLEIA Linnaeus.

C cinerea G
C sessiliflora Pursh
CASTILLEIA AFFINIS Hook & Arn.
Tips of floral bracts brilliant poppy-red.
ff j sz da 13
CASTILLEIA FOLIOLOSA Hook.-Arn.
CASTILLEIA HOLOLEUCA Greene.
CASTILLEIA LINEARIFOLIA Benth.
CASTILLEIA MINIATA Dougl.
CASTILLEIA OBLONGIFOLIA A. Gray.
CASTILLEIA PARVIFOLIA Bong.
CASTILLEIA PLAGIOTOMA A. Gray.
CASTILLEIA STENANTHA A. Gray.

Genus ORTHOCARPUS Nuttall.

ORTHOCARPUS ATTENUATUS A. Gry.
O densiflorus Bentham Ge ca ac b 2:
409 sz
ORTHOCARPUS HISPIDUS Benth.
ORTHOCARPUS PARISHII A. Gray.
ORTHOCARPUS PURPURASCENS Bh.

Genus CORDYLANTHUS Nuttall.

CORDYLANTHUS FILIFOLIUS Nutt.
CORDYLANTHUS NEVINI A. Gray.
CORDYLANTHUS MARITIMUS Nutt.
da 14, ff
Adenostegia maritlma Nutt in DC pd 10:598; KBr Zoe 2:368
CORDYLANTHUS ORCUTTIANUS A. G.

OROBANCHACEAE.

Genus APHYLLON Mitchell.

APHYLLON CALIFORNICUM A. Gray.
APHYLLON COMOSUM A. Gray.
APHYLLON COOPERI A. Gray.
APHYLLON FASCICULATUM A. Gray.
APHYLLON LUDOVICIANUM A. Gray.
APHYLLON TUEROSUM A. Gray.
APHYLLON UNIFLORUM A. Gray.

BIGNONIACEAE.

MARTYNIA ALTHEAEFOLIA Benth.

Genus CHILOPSIS Don.

CHILOPSIS SALIGNA Don.

Chilopsis Saligua Don.—Desert willow. "Mexicans use the flowers in fevers and as a stimulant in cardiac diseases." (Harvard).

ACANTHACEAE.

Genus BELEPERONE Nees.

BELEPERONE CALIFORNICA Benth.

LABIATAE.

Genus HYPTIS Jacq.

HYPTIS EMORYI Torr.

Genus MENTHA Linnaeus.

MENTHA CANADENSIS Linn.
M piperata L da 14
MENTHA VIRIDIS Linn.

LYCOPUS SINUATUS Ell.
L lucidus americanus G da 14

Genus PYCNANTHEMUM Mich.

PYCNANTHEMUM CALIFORNICUM T.

Genus MONARDELLA Bentham.

MONARDELLA CANDICANS Benth.
MONARDELLA HYPOLEUCA A. Gray.
MONARDELLA LANCEOLATA A. Gray.
V microcephala G
MONARDELLA LINOIDES Gray.
MONARDELLA MACRATHA A. Gray.
V tenuiflora G
MONARDELLA NANA A. Gray.
MONARDELLA ODORATISSIMA Benth
MONARDELLA PRINGLEI A. Gray.
MONARDELLA TENUIFLORA S. Wat.
MONARDELLA THYMIFOLIA Greene.
MONARDELLA VILLOSA Benth.

CALAMINTHA PALMERI A. Gray.

ACANTHOMINTHA ILICIFOLIA A. G.

Genus POGOGYNE Bentham.

POGOGYNE NUDIUSCULA A. Gray.
POGOGYNE SERPYLLOIDES A. Gray.
POGOGYNE TENUIFLORA A. Gray.

Genus SALVIA Linnaeus.

S bernardina Parish; G ca ac b 1:211 b
SALVIA COLUMBARIAE Benth.

Salvia Columbriae Bentham.—Mrs. Bingham says this is "the chia of the aborigines, and grows in soil in the foothills of the coast range. The seeds are demulcent, and used in gastro-intestinal disorders. The Indians roasted the seed, ground them between two stones, and used the meal for food. It is said to improve the taste of poor water, and on that account is of use to persons in crossing deserts. It quenches thirst and lessens the quantity of water desired, sometimes in that way preventing serious illness from excessive drinking of bad water. It is valued as a poultice, and the seeds are sometimes placed in the eye to form a mucilage by means of which foreign bodies may be removed from that organ. Quantities of these seeds have been found buried in graves several hundred years old, proving that the use of the seed reaches back into the remote past."

Prof. Sereno Watson (Bot. Cal. i:599) says, "The seed-like nutlets, infused in water, form a pleasant mucilaginous drink, which is largely used."

SALVIA CARDUACEA Benth.

Salva Carduacea Bentham.—The seed of this and the above species are identical except in size, and both known by the Indian name of "chia," "chio," or "chius." As the seed of this is much larger it is the one most largely used among the Indians of Southern and Lower California, and the above remarks of Mrs. Bingham concerning S. columbariae may be considered to apply equally well to this species.

SALVIA CEDROSENSIS Greene.

Genus SPHACELE Bentham.

SPHACELE CALYCINA Benth.

V wallacei G da 14

S fragrans Ge pi t 1:38; ca ac b 2:409 sz

Genus AUDIBERTIA Bentham.

AUDIBERTIA CAPITATA A. Gray.
AUDIBERTIA CLEVELANDI A. Gray.
AUDIBERTIA GRANDIFLORA Benth.
AUDIBERTIA INCANA Benth.

V pilosa G

V pachystaceya G j

AUDIBERTIA NIVEA Benth.
AUDIBERTIA PALMERI A. Gray.
AUDIBERTIA POLYSTACHYA Benth.
AUDIBERTIA STACHYOIDES Benth.

A Vaseyi Porter

SALIZARIA MEXICANA Torr.

Micromeria Douglasii Bentham.--"Yerba Buena." Valued as a blood purifier.

BRUNELLA VULGARIS Linn.

TEUCRIUM CUBENSE Linn.

Genus MARRUBIUM Linnaeus.

MARRUBIUM VULGARE Linn.

Marrubium Vulgare L.—Hoarhound, widely naturalized in California, is much used for coughs and lung diseases.

Genus STACHYS Linnaeus.

STACHYS ACUMINATA Greene.

S adjugoides Bentham da 14

S albens G da 14

STACHYS BULLATA Benth.

S californica Bentham da 14

Genus TRICHOSTEMA Linnaeus.

TRICHOSTEMA LANATUM Benth.

The black sage is a small shrub found in the coast range from Monterey southward to Baja California(?), "cultivated in gardens of the Californians," and "valued as a stimulant" (Mrs. Bingham).

TRICHOSTEMA LANCEOLATUM Bth.
TRICHOSTEMA MICRANTHUM A. Gry.
TRICHOSTEMA OVATUM Curran.
TRICHOSTEMA PARISHII Vasey.

"romero" of the Mexicans is valued for medicinal properties unknown to the writer. Dr. Edward Palmer, I believe, has published notes on the virtues of this plant in the American Naturalist, and also under the title of "Food Products," in one of the reports of the United States department of agriculture.

LOPHANTHUS URTICIFOLIUS Benth.

Genus SCUTELLARIA Linnaeus.

SCUTELLARIA ANGUSTIFOLIA Psh.
SCUTELLARIA BOLANDERI A. Gray.
SCUTELLARIA TUBEROSA Benth.

VERBENACEAE.

Genus VERBENA Linnaeus.

Verbena bracteosa Mich da 13

VERBENA CANESCENS H. B. K.
VERBENA CILIATA Benth.
VERBENA LILACINA Greene.
VERBENA LITTORALIS H. B. K.
VERBENA OFFICINALIS Linn.
VERBENA POLYSTACHYA H. B. K.
VERBENA PROSTRATA R. Br.

Genus LIPPIA Linnaeus.

LIPPIA LANCEOLATA Michx.
LIPPIA NODIFLORA Michx.

PLANTAGINACEAE.

Genus PLANTAGO Linnaeus.

PLANTAGO BIGELOVII A. Gray.
PLANTAGO HIRTELLA H. B. K.
PLANTAGO LANCEOLATA Linn.
PLANTAGO MAJOR Linn.

P maritima L ff

PLANTAGO PATAGONICA Jacq.

V gnaphaloides G Or e

PLANTAGO VIRGINICA Linn.

NYCTAGINACEAE.

Genus MIRABILIS Linnaeus.

MIRABILIS CALIFORNICA A. Gray.
MIRABILIS FROEBELII Behr.
MIRABILIS LAEVIS Curran.
MIRABILIS MULTIFLORA A. Gray.

Is M frœbelii

MIRABILIS TENUILOBA S. Watson.

Genus ALLIONIA Linnaeus.

ALLIONIA INCARNATA Linn.

Genus ABRONIA Jussieu.

ABRONIA LATIFOLIA Esch.

A arenari- Menzies

ABRONIA MARITIMA Nutt.
ABRONIA TURBINATA Torr.
ABRONIA UMBELLATA Lam.

ABRONIA VILLOSA S. Watson.

"Pubescence more or less densely villous, subglandular, spreading; stems weak and slender: leaves ¼-1′ long, oblong or ovate, obtuse or acutish, attenuate into a slender petiole; heads 5-10-flowered: involucral scales narrowly lanceolate, long-acuminate, 3-4″ long: fl. pink, the lobes obcordate with a deep sinus; fr. with a firm body, strongly reticulate-pitted, the 3-5 broad wings consisting of a simple lamina, usually truncate above. Nearest to A. umbellata," Arizona (Wheeler)." S. Watson, Amer. Natl., vii. 6 (May 1873).

OXYBAPHUS NYCTAGINEUS Sweet.

Genus BOERHAAVIA Linnaeus.

B erecta L Or 2090 j
BOERHAAVIA VISCOSA A. Gray.

POLYGONACEAE.

Genus RUMEX Linnaeus.

R acetosella L ff da 14
RUMEX CONGLOMERATUS Mun.
RUMEX CRISPUS Linn.
RUMEX HYMENOSEPALUS Torr.

"Sandy soils from El Paso to the canyons of the Rio Grande; Mr—Ap. Root white. Stem 2-3° high. 'Foliage intensely bitter;' Thurber. Lower leaves a ft or more long & 2–3′ wide, somewhat undulate on the margin: upper ones nearly flat. Panicle a ft long, fls crowded. Inner sepals of the fructiferous calyx nearly ½′ long, roundish-ovate, strongly cordate, of a very thin texture, often rose-colored, slightly reticulate-veined, twice as long as the achenium." * * * Torr bot m boundary 177–8. Or 71 j; d; z; da 14
RUMEX MARITIMUS Linn.
RUMEX SALICIFOLIUS Wein.

Genus POLYGONUM Linnaeus.

P acre HBK da 14
POLYGONUM AMPHIBIUM Linn.
POLYGONUM AVICULARE Linn.
POLYGONUM BISTORTA Linn.
POLYGONUM HARTWRIGHTII A. G.
POLYGONUM HYDROPIPEROIDES Mx.
P incurvatum Ell da 14
POLYGONUM NODOSUM Pers.
POLYGONUM TENUE Michx.

Genus NEMACAULIS Nuttall.

NEMACAULIS DENUDATA Nutt.

Genus ERIOGONUM Michx.

ERIOGONUM CLAVATUM Small.

"Annual, acaulescent. Leaves basal; blades 5–13 mm. broad, much broader than long, undulate, strigose-hispid on both sides, cordate at the base or rarely truncate; petioles about twice as long as the blades, hispid: scapes erect, solitary, glaucous, forked above, the ultimate division filiform, the lower internodes more or less swollen above the middle: bracts scale-like: peduncles hair-like, ½ cm. long, spreading: involucres narrowly turbinate, very small, less than 1 mm. long; segments obtuse, as broad as long, shorter than the tube: calices densely hirsute less than 1 mm. long, the segments nearly equal, ovate-lanceolate, acutish: filaments glabrous."—Small. j

ERIOGONUM GLAUCUM Small.

"Annual, slender, acaulescent. Leaves basal; blades ovate or oval-ovate, 5–10 mm long, obtuse, undulate-crisped, often inequilateral, softly hispid on both surfaces, obtuse or subcordate at the base; petioles 2–3 times longer than the blades, hirsute: scapes erect, solitary or several together, 1–6 cm tall, glaucous, forked, the branches ascending or spreading: peduncles filiform, about one cm. long, more or less spreading: involucres glabrous, turbinate, 1 mm. long; segments oblong, obtuse, about as long as the tube: calices densely hirsute, 2 mm. long; segments lanceolate, acute, erect; filaments glabrous." – Small, Bull. Torr. club, xxv, 51, Ja. 25, 1898. e

E latifolium Smith da 14; ff
E virgatum Bentham da 15
E delicatulum Wat da 15
E molestum Watson da 15
E insigne Watson Or 1466
E grande Ge pitt 1:38; ca ac b 2:410 sz
E rubescens Ge pit 1:39; ca ac b 2:410; sz
ERIOGONUM ANGULOSUM Benth.
ERIOGONUM APICULATUM S. Watson.

ERIOGONUM ARBORESCENS Greene.
ERIOGONUM BAILEYI S. Watson.
ERIOGONUM BRACHYPODUM T. & G.
ERIOGONUM CINEREUM Benth.
ERIOGONUM CRENULATUM Parry.

ERIOGONUM DESERTICOLA S. Wats.
"Apparently an annual of the E. Pusillum group (base and foliage unknown) tall, several times dichotomously branched, white-tomentose, becoming mostly glabrous and yellowish green; bracts all small and deltoid; involucres shortly pedicellate or subsessile toward the end of the branches, erect or spreading, turbinate-campanulate, 1" long: perianth villous, the elliptical segments y. with greenish or reddish m dveins, 1-1 ½" long. In the southwestern part of the Colorado desert, San Diego Co., California; C. R. Orcutt, November, 1890 (n. 2189)."—S. Watson, Proc. Am. Acad. xxvi. 125-6 (July 31, 1891).

ERIOGONUM ELONGATUM Benth.
ERIOGONUM FASCICULATUM Benth.

ERIOGONUM FOLIOSUM S. Watson.
"Of the E. vimineum group: annual, branching from the base, floccose-tomentose, the branches sparse and spreading: leaves ovate, cordate or cuneate at base, obtuse or acute, undulate, tomentose beneath, 3-9" long besides the petiole, radical, and in the axils of the subulate bracts: involucres broadly turbinate, cleft nearly to the middle, green, 1" long: fl. ½" long, the segments white or pinkish with a green midvein."—S. Watson. Proc. Am. Acad., xx. 371-2 (Feb. 21, 1885). Cantillas, Lower California (Palmer, 1875; Orcutt, 1882).

ERIOGONUM GIGANTEUM S. Watson.
ERIOGONUM GRACILE Benth.
ERIOGONUM INFLATUM Torr.

ERIOGONUM MINUTIFLORUM Wats.
"Of the E. Pusillum group very slender, 6' high or less, diffusely branching, glabrous, excepting the small ovate rosulate leaves which are densely white-tomentose on both sides, becoming less tomentose above; bracts minute; peduncles filiform, divericately spreading: 3-8" long; involucres very small (1-3" long), broadly turbinate-campanulate, purplish; perianth y., minutely puberulent, very small."—S. Watson, Proc. Am. Acad., xxvi., 125 (July 31, 1891). Colorado desert, San Diego Co., California (Orcutt, April, 1890).

ERIOGONUM NUDUM Dougl.

ERIOGONUM ORCUTTIANUM S. Wats.
"Of the E. Heermanni group: the very short herbaceous leaf stems from a woody base, and the rigid divaricate branches finely subtomentose-pubescent: leaves scattered, thick, nearly glabrous, broadly ovate or obovate, obtuse, shortly petiolate, ¾" long: bracts ternate, deltoid-subulate, small, subherbaceous: involucres solitary, tubinate-campanulate, subtomentose, nearly 1" long: fl. tomentose,, greenish white, 2-3" long, the oblong-obovate lobes of the perianth nearly equal."—S. Watson, Proc. Am. Acad., xx. 371 (Feb. 21, 1885). Shrub, 2' high: Cantillas Canyon, Lower California (H. C. and C. R. Orcutt, August, 1883).

ERIOGONUM PALMERI S. Watson.
ERIOGONUM PARISHII S. Watson.
ERIOGONUM PARRYI A. Gray.
ERIOGONUM PARVIFOLIUM Smith.
ERIOGONUM PLUMATELLA D. & H.
ERIOGONUM PONDII Greene.
ERIOGONUM PUSILLUM T. & G.
ERIOGONUM RENIFORME Torr.
ERIOGONUM SAXATILE S. Watson.
ERIOGONUM STELLATUM Benth.
ERIOGONUM THOMASII Torr.

ERIOGONUM THURBERI Torr.

"Sandy ravines, San Pasqual, Calif., My; Thurber. * * Wallace. Leaves in a subradical cluster, about ½' long undulate-rugose pubescent above. white tomentose underneath. Stem a scape about a span high, trichotomously subdivided below the middle, with ovate acute ternate bracts at the forks Pedicels 1' long. Involucre less than a line in diameter, cleft nearly to the middle into 6 rather obtuse lobes; exterior segments of the perianth nearly four times broader than the inner. Filaments & ovary smooth. Styles short. Achenium smooth. Embryo strongly curved. No bracteoles were detected; in their place are only woolly hairs." * * * Torr bot m boundary 176–7 Or j; da 14

ERIOGONUM NODOSUM small.

"A white-tomentose shrub, .5–1.5 meters tall, with spreading, forking branches. Leaves small, 2–6 mm. long; blades elliptic or elliptic-ovate, acutish, revolute, narrowed into short petioles: bracts scale-like, acute or acuminate: involucres turbinate-campanulate, 2 5 mm. long, angled, sessile; segments broad, much shorter than the tube; calices glabrous. pink, 3 mm. long; segments rounded at the apex, the 3 outer oblong or obovate-oblong, the 3 inner cuneate: filaments villous below the middle: achenes 3-angled, scabro-pubescent above the middle."—Small, Bull. Torr. club, xxv, 49. Ja 25 1898. e

ERIOGONUM TRICHOPODUM Torr.
ERIOGONUM UMBELLATUM Torr.
ERIOGONUM VIMINEUM Dougl.
ERIOGONUM WRIGHTII Torr.

Genus CHORIZANTHE R. Brown.

CHORIZANTHE BREVICORNU Torr.
CHORIZANTHE CALIFORNICA A. G.
CHORIZANTHE CORRUGATA T. & G.
CHORIZANTHE FERNANDINA S. Wat.
CHORIZANTHE FIMBRIATA Nutt.
CHORIZANTHE LACINIATA Torr.
CHORIZANTHE LEPTOCEROS S. Wat.
CHORIZANTHE ORCUTTIANA Parry.

"Decumbent, 2-6′ broad, appressed pubescent throughout, densely branched from the base; radical leaves narrowly lanceolate, obtuse, tapering to a slender petiole; cauline leaves smaller, sessile, oppos te, connate, obtuse; upper involucral bracts broadly triangular, scarious, accuminate; involucres in the lower forks and loosely scattered on the slender branches, sharply triangular, w th short chartaceous tube (not corrugated); divisions 3, nearly equal, not conspicuously foliaceous, broadly divergent, with recurved uncinate awns; fl. partly exsert, pedicellate; perianth as long as the pedicel, tube narrowly turbinate, segments equal, narrowly spathulate, with long crate hairs externally, extending beyond the segments in an irregular fringe; stamens 3 (or less), with short filaments on the throat; anthers dull reddish, orbicular; stigmas short, recurved; akene narrowly triangular; embryo 1″ in length, with linear cotyledons and slender radicle."—Parry, Proc. Dav. Acad. Natl. Sci., iv. 54-5 (1884).

CHORIZANTHE PARRYI S. Watson.
CHORIZANTHE PERFOLIATA A. Gray.
CHORIZANTHE POLYGONOIDES T.-G.
CHORIZANTHE PROCUMBENS Nutt.
CHORIZANTHE RIGIDA T. & G.
CHORIZANTHE SPINOSA S. Watson.
CHORIZANTHE STATICOIDES Benth.
CHORIZANTHE THURBERI S. Watson.
CHORIZANTHE WATSONI T. & G.
CHORIZANTHE XANTI S. Watson.

Genus OXYTHECA Nuttall.

OXYTHECA CARYOPHYLLOIDES Pry.
OXYTHECA INERMIS S. Watson.
OXYTHECA LUTEOLA Parry.
OXYTHECA PARISHII Parry.
OXYTHECA PERFOLIATA T. & G.
OXYTHECA TRILOBATA A. Gray.

Genus LASTARRIAEA Remy.

LASTARRIÆA CHILENSIS Remy.

"Involucral whorls closely adherent, and similar to the external auline leaves; perianth sharply triangular, coriaceous, segments unequal, with prolonged uncinate awns."—Parry, Proc. Dav. Acad. Natl. Sci., v. 36 (Nov. 1, 1886).

Genus HARFORDIA Parry.

HARFORDIA FRUTICOSA Greene.
HARFORDIA MACROPTERA Parry.

Genus PTEROSTEGIA F. & M.

PTEROSTEGIA DREYMARIOIDES Nutt.

AMARANTACEAE.

Genus AMARANTUS Tournefort.

AMARANTUS ALBUS Linn.
AMARANTUS CALIFORNICUS S. Wat.
AMARANTUS FIMBRIATUS Benth.
AMARANTUS PALMERI S. Watson.
AMARANTUS REFLEXUS Linn.

Genus NITROPHILA S. Watson.

NITROPHILA OCCIDENTALIS S. Wat.

Genus CLADOTHRIX Nuttall.

CHLADOTHRIX LANUGINOSA Nutt.
CHLADOTHRIX OBLONGIFOLIA Nutt

CHENAFODIACEAE.

Genus APHANISMA Nuttall.

APHANISMA BLITOIDES Nutt.

Genus CHENOPODIUM Tournefort.

CHENOPODIUM ALBUM Linn.
CHENOPODIUM AMBROSIOIDES Linn.

Chenopodium Ambrosioides L.—"A common weed in many parts of the world, is used as a vermifuge under the name of worm seed." (Mrs. Bingham).

CHENOPODIUM CALIFORNICUM S. W.
CHENOPODIUM FREMONTI S. Watson
CHENOPODIUM MURALE Linn.

Genus MONOLEPIS Schrader.

MONOLEPIS CHENOPODIOIDES Moq.
MONOLEPIS SPATHULATA A. Gray.

Genus ATRIPLEX Tournefort.

ATRIPLEX BRACTEOSA S. Watson.
ATRIPLEX CANESCENS James.
ATRIPLEX COULTERI Dietr.
ATRIPLEX DILATATA Greene.
ATRIPLEX EXPANSA S. Watson.
ATRIPLEX HYMENELYTRA S. Watson
ATRIPLEX JULACEA S. Watson.
ATRIPLEX LEUCOPHYLLA Dietr.
ATRIPLEX MICROCARPA Dietr.
ATRIPLEX ORBICULARIS S. Watson.
ATRIPLEX PALMERI A. Gray.
ATRIPLEX PARISHII S. Watson.
ATRIPLEX PATULA Linn.

Genus EUROTIA Adanson.

EUROTIA LANATA Moq.

Eurotia Lanata Moquin.—"Of good repute as a remedy for intermittents." (Watshon, Bot. Cal. II. 56).

GRAYIA POLYGALOIDES Hook-Arn.

Genus SALICORNIA Tournefort.

SALICORNIA AMBIGUA Michx.
SALICORNIA HERBACEA Linn.
SPIROSTACHYS OCCIDENTALIS S. W.

Genus SUAEDA Forskal.

SUAEDA TORREYANA S. Watson.

BATIDEAE.

Genus BATIS P. Browne.

BATIS MARITIMA Linn.

LAURACEAE.

Genus UMBELLALARIA Nuttall.
UMBELLULARIA CALIFORNICA Nutt.

URTICACEAE.

Genus URTICA Tournefort.
URTICA HOLOSERICEA Nutt.
URTICA URENS Linn.

Genus HESPEROCNIDE Torrey.
HESPEROCNIDE TENELLA Torr.

Genus PARIETARIA Tournefort.
PARIETARIA DEBILIS Forst.

PLATANACEAE.

Genus PLATANUS Tournefort.
PLATANUS RACEMOSUS Nutt.

The sycamore is a spreading, lofty tree common near water courses from the coast to the desert, up to an altitude of 3,000 or 4,000 feet. "A tree growing in sandy loam at San Bernardino measures 9½ feet in circumference at 3½ feet from the ground; height about 60 feet."—Parish, Zoe, 4:3.

BUXACEAE.

Genus SIMMONDSIA Nuttall.
SIMMONDSIA CALIFORNICA Nutt.

The goat-nut, or deer-nut, is an acorn-like fruit, edible and pleasant to the taste, produced by a low, oval-formed, rigid shrub, in profusion, under all conditions of soil from the sea coast to the borders of the desert to eastern Arizona. The Indians at the Catalina mission, in Lower California, claim not to eat them, and I find no record of their ever having been utilized for food. It occurs on Cedros island, and the mainland opposite to the gulf shores.

EUPHORBIACEAE.

Genus EUPHORBIA Linnaeus.
EUPHORBIA ALBOMARGINATA T.-G.
EUPHORBIA ERIANTHA Benth.
EUPHORBIA HIRTULA Engelm.
EUPHORBIA MISERA Benth.
EUPHORBIA PALMERI Engelm.
EUPHORBIA PARISHII Greene.
EUPHORBIA POLYCARPA Benth.

Euphorbia Polycerpa Benth.—The name Golondrina is applied indiscriminately by Mexicans to various species of small prostrate herbs belonging to the genus Euphorbia, each of which is reputed to be a certain antidote against the bite of the rattlesnake or of any of the poisonous reptiles or insects. It is popularly believed that wherever the rattlesnake may occur that some form of this rattlesnake weed may be found. Some form is sure to be found in any portion of the southwest, from California to Texas, southward into Mexico.

Indians are said to chew the plant when bitten by a snake, and swallowing the juice, stuff the cud into the wound or apply it as a poultice, or sometimes make a weak tea. Said also to be useful in cases of internal as well as of external poisoning, but I have found no evidence to sustain this statement, and as the plant is in itself poisonous to some people when the juice is externally applied to the skin, it should be handled with caution, except in dire necessity. It seemingly has no effect upon the writer.

A CURE FOR SNAKE BITES.
steeped in milk and given to children in cases of their being bitten by a rattlesnake.

v micromera Milsp. Or e
EUPHORBIA SERPYLLIFOLIA Pers.
v co sanguinea Boiss Or d
E longiceruris Scheele. Or
E peo oides Nutt Or
E dictyosperma F.M Or
E dentata Mx Or
E heterophylla graminifolia E Or
E baja californica Milsp. Orj 1331
E setiloba E Or
E wrightii T-G Or
EUPHORBIA SPLENDENS Boj.
EUPHORBIA TOMENTULOSA S. Wat.

Genus EREMOCARPUS Benthum.
EREMOCARPUS SETIGERUS Benth.

Genus ACALYPHA Linnaeus.
ACALYPHA CALIFORNICA Benth.

Genus CROTON Linnaeus.
CROTON CALIFORNICUS Mull.
CROTON TENUIS S. Watson.
BERNARDIA MYRICAEFOLIA S. Wat.

Genus STILLINGIA Garden.
STILLINGIA ANNUA Mull.
STILLINGIA LINEARIFOLIA S. Wat.

Genus ARGYTHAMNIA P. Browne.
ARGYTHAMNIA SERICOPHYLLA A. G.
ARGYTHAMNIA SERRATA Mull.

Genus TETRACOCCUS Engelmann.

TETRACOCCUS DIOICUS Parry.

"Shrubby, dioecious; staminate flowers involucrate on slender pedicels in the axils of the upper leaves of recent shoots; inflorescense with a prolonged central axis a little shorter than the leaves, and usually 2 or more unequally developed opposite branches, bracteate at base; involucre in a double series, persistent, with 7-9 short, rounded segments; stamens 7-9 long exsert, inserted at the base of the involucral scales, encircling an irregularly lobed, central disk; filaments densely ciliate-pubescent at base, anthers extrorse, broadly 2-celled. Pistillate flowers in the axils of lower leaves on recent shoots, single pedicellate; pedicels thickening upwards, and bibracteate near the middle involucre of 7-9 oblong, unequal segments in 2 series with 4 glandular scales on the inner surface, segments fragile at maturity. Ovary 4 lobed, densely tomentose-hispid, with 4 long, recurved stigmas. Capsule orbicular, broadly 4 lobed and 4 celled, the thin epicarp separating in valves from rigid cocci which part at maturity, the separate cells dehiscing at both sutures. Ovules 2 to each cell pendant, from the upper placental column which persists as a rigid central axis after the rupture of the cells. Seeds by abortion 1 to each cell, smooth, oblong, conspicuously carunculate. Embryo with broad cotyledons and short, straight radicle immersed in copious albumen. Leaves narrowly lanceolate, nearly sessile with a somewhat decurrent midrib, smooth, rather rigid and inclined to curve on the upper face, mostly opposite or in ternate whorles, often fasciculate in the lower axils, and with short reduced branches on the lower shoots."—Parry, Western Sci. i. 13. 1885.

RICINIS COMMUNIS Linn.

CALLITRICHACEAE.

Genus CALLITRICHE Linnaeus.

CALLITRICHE LONGIPEDUNCULATA
CALLITRICHE VERNA Linn.

PIPERACEAE.

Genus ANEMOPSIS Hooker.

YERBA MANSE.

ANEMOPSIS CALIFORNICA B. & H. This is one of the favorite medicinal herbs of the old Spanish Californians, but has won a permanent place in European greenhouses, and should be grown there for showing it deserves in the land of its birth. It is readily grown in moist soil, the apple-green foliage, frequently blotched with crimson, showing off the rather large white flowers to great advantage.

Anemopsis Californica Benth. & Hook.—The "Yerba Manse" of the Mexicans has a "strongly pungent, astringent, aromatic root, valued for the healing of ulcers, both of the mucous membrane and of the outer surface" (Mrs. Bingham). Much used for medicinal purposes by the Indians and Mexicans (Watson, Bot. Cal. ii:78). Widely distributed over Southern and Lower California, in moist, salty ground.

CERATOPHYLLACEAE.

Genus CERATOPHYLLUM Linnaeus.

CERATOPHYLLUM DEMERSUM Linn.

BETULACEAE.

Genus ALNUS Tournefort.

ALNUS OBLONGIFOLIA Torr.

The alder is a slender tree occurring along our perennial streams, from Mission valley to the Cuyamaca mountains in Lower California, and north and eastward. Rarely exceeds 50 feet in height and 2 feet in diameter.

ALNUS RHOMBIFOLIA Nutt.

SALICACEAE.

Genus SALIX Tournefort.

SALIX CAUDATA Muhl.
SALIX LAEVIGATA Bebb.
SALIX LASIANDRA Benth.
SALIX LASIOLEPIS Benth.
SALIX LONGIFOLIA Muhl.
SALIX SESSILIFOLIA Nutt.

Genus POPULUS Tournefort.

POPULUS TRICHOCARPA T. & G.

JUGLANDACEAE.

Genus JUGLANS Linnaeus.

JUGLANS CALIFORNICA Watson. The California Black Walnut is a tree or large shrub, producing small nuts of an excellent flavor, preferred by some to the Madeira nut. A grand ornamental tree, attaining a height of 60 feet, prolific, and could be advantageously grown in arid localities.

The California black walnut is usually a small tree, growing 50 to 75 feet high, 2 to 4 feet in diameter, bearing a roundish nut, the kernel sweet and delicate in flavor. Occurs from along the Sacramento river to San Diego county, California; occasionally cultivated, but more as a shade or street tree, than for its excellent nuts.

Genus CORYLUS Tournefort.

Crostrata Aitv californica A DC.

CUPULIFERAE.

Genus CASTANOPSIS Spach.

CASTANOPSIS CHRYSOPHYLLA A. DC

Genus QUERCUS Linnaeus.

Q. GRIFOLIA Nee.

The California live oak is justly one of the trees described as picturesque, the stout, low trunk 8, to even 20 feet, in circumference, with a spread of branches of 120 feet. Mendocino county appears to be its northern limit, while near La Grulla, south of Ensenada, Lower California, is the most southern recorded station, where its branches sweep the ground. The shining, elongated, tapering, acute-pointed acorn, 1-1½ inches long, and ¼ to 1-3 inch in diameter, characterizes the species and are among the treasured trophies of the average tourist, who often says he "can taste them still"—but generally prefers not to do so—the second time.

Q. ENGELMANNI Ge. [Q oblongifolia]

The Englemann, or Post oak, is a small spreading tree, 40 feet high, with a trunk usually under 3 feet in diameter. Not rare near Pala, Fallbrook, the Potrero, and into Lower California, 20 miles or so from the sea.

QUERCUS CHRYSOLEPIS Liebm.
QUERCUS DUMOSA Nutt.
QUERCUS EMORYI Torr.
QUERCUS KELLOGGII Newb.
QUERCUS PALMERI Engelm.
QUERCUS PUNGENS Engelm.

LORANTHACEAE.

Genus ARCEUTHOBIUM Bieb.

ARCEUTHOBIUM DOUGLASII Engelm.
ARCEUTHOBIUM OCCIDENTALE E.

Genus PHORADENDRON Nuttall.

PHORADENDRON BOLLEANUM Eichl.
PHORADENDRON CALIFORNICUM Nt.
PHORADENDRON FLAVESCENS Nutt.
PHORADENDRON JUNIPERINUM Em.

GNETACEAE.

Genus EPHEDRA Tournefort.

EPHEDRA CALIFORNICA S. Watson.

Ephedra californica Watson.—"Canatilla" or Mountain tea, and "tepopote" (fide Havard), are names applied to several of the genus Ephedra. "They are popular remedies among Mexicans and frontiersmen in the treatment of syphilis and gonorrhœa, especially the latter. The decoction or infusion of the stems has an acid reaction and an astringent taste resembling that of tannin. It is used as an injection and internally; some caution should be observed as it has been known to cause strangury." (Dr. V. Havard, vide Proc. U. S. Nat. Mus. VIII., 504.) The species Dr. Havard refers to are E. antisyphilitica C. A. Meyer and E. trifurca Torrey, but the same remarks seem to apply equally well to our Californian species. It is often used as a substitute for tea, and is scarcely distinguishable in taste, except for an after-flavor, not unpleasant, reminding one slightly of catnip tea. It is in great renown as a blood purifier and many have volunteered to me their opinion that it was "better than sarsaparilla" and without an equal. I have never heard of unpleasant effects following its use. It is a valuable sedative. Experiments and analyses prove it to be not superior to E. antisyphilitica—which already has a place among American drugs.

EPHEDRA NEVADENSIS S. Watson.
EPHEDRA OXYCARPA Engelm.
EPHEDRA TRIFURCA Torr.

CONIFERAE.

Genus JUNIPERUS Linnaeus.

JUNIPERUS CALIFORNICUS Carr.

Genus LIBOCEDRUS Endl.

L. decurrens Torr. white cedar.

Genus PINUS Tournefort.

P. MURICATA Don.

A small pine, growing near San Isidro, in Lower California, not known from San Diego county, is found, only near the coast, as far north as Mendocino—where it grows 50 to 80 or 120 feet high. At San Isidro trees only 3 feet high were perfecting cones, which are said to persist over 30 years on the tree. The leaves are in pairs. The cones are sessile, ovate, about 3 inches long, with stout prickles on the outside. The cones occurring in whoils around the stem, and remaining closed for many years, are one of the curiosities of California botany.

PINUS COULTERI Don. Big-cone pine, the "cone elongated, elliptical, of matchless size and weight, 15 to 20 inches long, and often weighing 5 to 8 pounds."

The big cone pine is a tree 1-2½ feet in diameter and 50 or more feet high, occurring above 5,000 feet usually, from Mount Diablo to the Catalina mountain and on the mountains northeast of Ensenada in Lower California. The cones are long, oval pointed, 10-14 inches long and 4 or 5 inches in diame-

ter, yellowish brown, persistent for many years on the tree, the scales with a very stout, long incurved point (sometimes 2 inches long.)

PINUS PONDEROSA Dougl. Western yellow pine. Trees of the largest size, 200 to 300 feet in height, and 5 to 15 feet thick.

The yellow pine is a noble tree, one of the largest known, 200-300 feet high and 12-15 feet in diameter at times, with leaves in threes, 5 to even 11 inches long. "Throughout the San Bernard no range, the San Jacinto and Cuyamaca mountains, forming the greater part of the coniferous forest," says Parish (Zoe., 4:351.)

PINUS JEFFREYI Murr.

The Jeffrey or black pine is a tree 75 feet high, trunk 3 feet in diameter, usually found in the mountain valleys near small streams, extending into Lower California. Credited to the Cuyamaca mountain.

PINUS LAMBERTIANA Dougl. The Great Sugar pine, bearing immense cones.

The sugar pine attains at times a height of 300 feet and a diameter of 8 to 20 feet, with light brown smoothish bark, splitting in small sections. The bright brown cylindrical cones are 1 to 1½ feet long, 3-4 inches wide, on peduncles 3 inches in length, containing smooth, black seeds ½ inch long. "The exundation from the partially burned tree loses its resinous qualities and acquires a sweetness similar to that of sugar or manna, for which it is sometimes used, whence the name of sugar pine." (Watson, Botany of California, 2:123). The sugar which I have collected from trees in the Cuyamaca mountains was very sweet, fine grained and white as snow.

PINUS MONOPHYLLA T. & G.
PINUS PARRYANA Engelm.

The pinone tree, peculiar to Southern and Lower California, but most abundant on the table lands near the international boundary, is a very graceful and symmetrical tree, 20-30 feet high, 10-18 inches in diameter, distinguished by the 3-5 (mostly 4) leaves in a sheath, 1¼-1½ inches long. The oval seeds, 5-8 lines long, with a thin light-brown mottled shell, are delicious in flavor, either roasted or fresh, and in a good season are collected in immense quantities by the Indians for food. These nuts in a roasted condition are not rare in San Diego markets, and often exported in quantities, being considered quite a luxury with some. Unlike the other nut pines, the tree is very ornamental when properly grown, and forms a worthy monument to the botanist of the Mexican boundary survey of 1850—Dr. Charles Christopher Parry—in whose honor the specie is named.

PINUS RADIATA Don. (P. insignis, Loudon.) Monterey pine; a popular tree for California planting.

PINUS SABINIANA Dougl. Gray-leaf pine; one of the nut pines, or "Digger Pine," the large seeds of which were formerly used for productive. A vigorous grower.
or more, the main stems often with a circumference of 50 feet."

PINUS TORREYANA Parry.

The Soledad pine was for many years believed an exclusive resident of the suburban parts of San Diego, occurring on the hills facing the sea near Del Mar. A second small grove has been discovered on Santa Rosa island. Where most exposed it forms a low, scraggly shrub, 2 or 3 feet high only at times, but spreading over a wide area; at its best estate it forms a small, graceful tree 20 to 30 feet high, a foot or more in diameter. The very stout leaves are 8 by 11 inches long, 5 in a sheath. The edible seeds, 8-11 lines long, with a very hard shell, produced in an ovate cone, 4-5 inches long and nearly as great diameter.

Genus SEQUOIA Endl.

SEQUOIA GIGANTEA Lindl & Gordon. The Giant Redwood, or "Big Tree" of California—the largest tree known in the world.

SEQUOIA SEMPERVIRENS Endl. Redwood, "one of the most colossal trees of the globe."

Genus PSEUDOTSUGA Carriere.

Pseudotsuga macirocarpa, so named by Prof Lemmon in the third Cal. For. report, 134, is a "rather irregular tree 150 feet high, 4 feet in trunk diameter. Bears light crops of cones, the reported fecundity perhaps exceptional." It was originally found between Banner and Julian, in San Diego county, where it forms one of the most beautiful of trees, perfect in symmetry and grace. It is nearly allied to the Douglas spruce of the north, and for many years treated as a variety—as it should probably still be treated.

Genus ABIES Link.

ABIES CONCOLOR Lindl.
ABIES BRACHYPHYLLA Maxim.
ABIES FIRMA Sieb & Zucc.

ABIES HOMOLEPIS Sieb. & Zucc.
ABIES MARIESII Mast.
ABIES SACHALINENSIS Mast.
ABIES VEITCHII Lindl.

The last 6 are Japanese recommended for Cal.

Genus CUPRESSUS Tournefort.

The Californian species of cypress are among the most widely planted of evergreens, & are very ornamental. The Monterey cypress is much used for hedges; the Lawson cypress is a species of Chamaecyparis.

C GOVENIANA Gordon.

CUPRESSUS GUADALUPENSIS Watson. The Guadalupe or blue cypress is a small tree with slender, light green, drooping branchlets; the bark, flaking off, leaves a claret-red surface to the limbs.

The blue cypress is a handsome, slender tree, 40 to possibly 60 feet high, with beautiful exfoliating reddish bark and glaucous foliage, first discovered on Guadalupe island, and later found in rocky canyons near Ensenada, on the mainland. It proves not rare in some of the canyons near the international boundary, and Parish records it in "ravines near the Old Mission, San Diego, not abundant" (Zoe., 4:352). Its graceful habit and compact growth makes it one of the most ornamental species in the genus.

C Lawsoniana see Chamaecyparis Lawsoniana

CUPRESSUS MACROCARPA Hartweg. Monterey cypress, a familiar hedge-tree in California, cones the largest of the genus, about an inch thick.

Genus THUYA Tournefort.

Thuya gigantea Nutt arbor vitæ not d

Genus CHAMAECYPARIS Spach.

C lawsoniana Parlat

Genus TSUGA Carriere.

T mertensiana Carr Mar in co. to Alaska

Genus PICEA Link.

P sitchensis Carr Mendocino to Alaska

TAXACEAE.

Genus TORREYA Arnott.

T californica Torr Canutmeg not d

Genus TAXUS Tournefort.

T brevifolia Nutt. yew

ORCHIDACEAE.

Genus EPIPACTIS Haller.

EPIPACTIS GIGANTEA Dougl.

Genus CYPRIPEDIUM Linnaeus.

C montanum Doug.

Genus HABENARIA Willd.

HABENARIA COOPERI S. Watson.
H elegans Bolander
H unalaschensis Wat da 17
HABERNARIA LEUCOSTACHYS S. W.

IRIDACEAE.

SISYRINCHIUM Linnaeus.

SIS CHIUM BELLUM S. Watson.
S c cum Ait da 17

Genus IRIS Tournefort.

I m phon Torr Or 1506 d

AMARYLLIDACEAE.

Genus AGAVE Linnaeus.

AGA DESERTI Engelm.

The scal of the desert, glaucous foliage.

AGAVE MARGARITAE Brandege. A recent introduction from the islands off Lower California, and one of the handsomest of the smaller growing agaves.
AGAVE HORRIDA Lem.
AGAVE LECHEGUILLA Torr.
AGAVE MICRACANTHA Slm-Dyck.

AGAVE PALMERI Engelmann. A very symmetrical species, found in the mountains of Southern Arizona.
AGAVE PARRYI Engelm.
AGAVE PRINGLEI Engelm.
AGAVE SHAWII Engelmann. Very compact, dark olive-green leaves, margined with stout spines. Peculiar to the coast region of Southern and Lower California.
AGAVE STRIATA Zucc.
AGAVE UNIVITTATA Haw.
AGAVE UTAHENSIS Engelm.
AGAVE VICTORIAE-REGINAE T. Mre.
AGAVE XYLONACANTHA Slm-Dyck.

LILIACEAE.

BEIRIA TENUIFLORA Greene. Grassy leaves about a foot long; flowers tubular, borne in an umbel, the stamens much exserted, brilliant scarlet in color, reminding one somewhat of Brevoortia Ida-Maia. A Mexican bulb nearly allied to Bessera elegans.

Genus ALLIUM Linnaeus.

ALLIUM ACUMINATUM Hook.
ALLIUM ATTENUIFOLIUM Kellogg.
ALLIUM CRISPUM Greene.
ALLIUM DICHLAMYDEUM Greene
ALLIUM FIMBRIATUM S. Watson.

ALLIUM HAEMATOCHITON Watson.

The mesas and hills around San Diego are decked in springtime with the clusters of bright purplish-tinted flowers of this wild onion, which deserves a prettier name at the hands of its friends. It does not prove quite hardy in New England, but will give much pleasure for the cost of growing in the house among its more showy cousins.

ALLIUM LACUNOSUM S. Watson.
ALLIUM PARVUM Kellogg.
ALLIUM PENINSULARE Lemmon.
ALLIUM SERRATUM S. Watson.
ALLIUM UNIFOLIUM Kellogg.

Genus MUILLA S. Watson.

MUILLA CORONATA Greene.
MUILLA MARITIMA S. Watson.

Ord j [et v—da 17

Genus CALOCHORTUS Parsh.

CALOCHORTUS APICULATUS Bak.
CALOCHORTUS ALBUS Dougl.
CALOCHORTUS AUREUS S. Watson.

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cuneate, pubescent leaf, 3-4' long; scape short, 1-2-flowered, the single pair of bracts linear, 2" long; sepals greenish ..., with a dark-p. spot near the base, oblong, or ovate-lanceolate; petals broadly cuneate, 15" long, bright-y., with a small, well-defined circular densely hairy gland near the base and a lunate purplish spot above it; young capsule narrowly oblong, not winged.On sand-cliffs, Southern Utah (Mrs. E. P. Thompson); June."—S. Watson, Amer. Natl., vii. 1 (May, 1873).

CALOCHORTUS BARNEDI Lemmon
CALOCHORTUS BENTHAMI Baker.
CALOCHORTUS BONPLANDIANUS Sht
CALOCHORTUS CAERULEUS S. Wat.
CALOCHORTUS CATALINAE S. Wat.
CALOCHORTUS CITRINUS Baker.
CALOCHORTUS CLAVATUS S. Watson
CALOCHORTUS DOUGLASIANUS Sht.
CALOCHORTUS ELEGANS Pursh.
CALOCHORTUS FLAVUS Schult.
CALOCHORTUS FLEXUOSUS S. Wats.

"Biennial and flexuous above; bracts alternate, ½-1½' long, linear-lanceolate, ... acute; rather rigid, sepals oblong-lanceolate, greenish with a deep-p. and ... or p. gland above, the glandular cilia ... 12-15" long, purplish, with a deep-p. claw and an ill-defined circular ... of a gland above, the glandular hairs extending laterally to the margin; ... triangular, narrowly oblong. Southern Utah and Northern Arizona (Mrs. E. P. Thompson); April and May. The bulbs, as of other species, are eaten by the Indians."—S. Watson, Amer. Natl., ... (...).

CALOCHORTUS FUSCUS Schult.
CALOCHORTUS GREENEI S. Watson.
CALOCHORTUS GUNNISONI S. Watson
CALOCHORTUS KENNEDYI Porter.
CALOCHORTUS LEICHTLINII Hook J.
CALOCHORTUS LILACINUS Kellogg.
CALOCHORTUS LONGEBARBATUS
CALOCHORTUS LUTEUS Dougl.
CALOCHORTUS MACDONALDI S. Watson.

"Near C. nitidus, stems 6-12 inches and ... 2 flexures, 1-2 flow., bracts ... or more solitary fl.; sepals naked, ... petals lilac or purplish, with a darker p. sparingly brown-villous spot at the base surrounding the short-oblong hairy gland, 1-2" long; anthers oblong-elliptical, obtuse, 1½" long; capsule narrowly elliptical, ... beaked, ... 1" long. Los Angeles County, California, collected on hills near Los Angeles by W. S. Lyon and Dr. Gray, and at Newhall by Dr. Gray, in 1885."—S. Watson, Proc. Am. Acad., xxi. 455 (June 9, 1886).

CALOCHORTUS MACROCARPUS Dougl.
CALOCHORTUS MAWEANUS Leichtl
CALOCHORTUS MONOPHYLLUS Lem.
CALOCHORTUS NITIDUS Dougl.
CALOCHORTUS NUTTALLII Torr-Gray.
CALOCHORTUS OPPOSITIFOLIUS Lemm.
CALOCHORTUS PALMERI S. Watson.
CALOCHORTUS PLUMMERAE Greene.
CALOCHORTUS PULCHELLUS Dougl.
CALOCHORTUS PUSILLUS Dougl.
CALOCHORTUS SPLENDENS Dougl.
CALOCHORTUS TOLMIEI Hook-Arn
CALOCHORTUS VENUSTULUS Greene.
CALOCHORTUS UNIFLORUS Hook Arn
CALOCHORTUS VENUSTUS Dougl.
CALOCHORTUS VESTITUS Benth.
CALOCHORTUS WEEDII Wood.

Genus CAMASSIA Lindl.

CAMASSIA ESCULENTA Lindl.
CAMASSIA FRASERI Torr.
CAMASSIA LEICHTLINII S. Watson

Genus ERYTHRONIUM Linnaeus.

ERYTHRONIUM ALBIDUM Nutt.
ERYTHRONIUM AMERICANUM Ker-G.
ERYTHRONIUM GIGANTEUM Lindl.
ERYTHRONIUM GRANDIFLORUM
ERYTHRONIUM HARTWEGI S. Wat.
ERYTHRONIUM NUTTALLIANUM
ERYTHRONIUM PROPULLANS A. Gray
ERYTHRONIUM PURPURASCENS
ERYTHRONIUM REVOLUTUM Baker

Genus FRITILLARIA Linnaeus.

FRITILLARIA ATROPURPUREA Nutt
FRITILLARIA BIFLORA Lindl.
FRITILLARIA LANCEOLATA Pursh
FRITILLARIA LILIACEA Lindl.
FRITILLARIA MULTIFLORA Kellogg.
FRITILLARIA PARVIFLORA Torr.
FRITILLARIA PLURIFLORA Torr.
FRITILLARIA PUDICA Spreng.
FRITILLARIA RECURVA Benth.

Genus BRODIAEA Smith.

BRODIAEA BRIDGESII S. Watson.
BRODIAEA CAPITATA Benth.
BRODIAEA COCCINEA A Gray.
BRODIAEA CONGESTA Sm.
BRODIAEA CROCEA S. Watson.
BRODIAEA DOUGLASII S. Watson.
BRODIAEA FILIFOLIA S. Watson.
BRODIAEA GRACILIS S. Watson.
BRODIAEA GRANDIFLORA Smith.
BRODIAEA HOWELLII S. Watson.
BRODIAEA IXIOIDES S. Watson.
BRODIAEA LACTEA S. Watson.
BRODIAEA LAXA S. Watson.
BRODIAEA LEMMONAE S. Watson.
BRODIAEA MINOR S. Watson.
BRODIAEA MULTIFLORA Benth

HOOKERA, ORCUTTII Greene.

"Scape stout, 1° or more high; leaves linear, flat or conduplicate, not terete, pedicles 6-15 1 1-2" long; perianth-segments oblong-lanceolate, twice the length of the short tube; free portion of the filaments about 2" long, the linear anthers ... as long; staminodia wanting (?)."—Greene, Bull. Cal. Acad. Sci., i. 138 (Nov. 15, 1885).

BRODIAEA PEDUNCULARIS S. Wat.
BRODIAEA STELLARIS S. Watson.
BRODIAEA TERRESTRIS Kellogg.

Genus TRILLIUM Linnaeus.

TRILLIUM CALIFORNICUM Kellogg.
TRILLIUM CHLORATUM Pursh.
TRILLIUM PETIOLATUM Pursh.
TRILLIUM SESSILE Linn.

Genus LILIUM Linnaeus.

LILIUM BLOOMERIANUM Kellogg.
LILIUM HOLANDERI S. Watson.
LILIUM COLUMBIANUM Hort.

LILIUM HUMBOLDTII Roez and Leichtl. Very ... large golden yellow blossoms, dotted with purple; a very showy and magnificent lily.

LILIUM MARITIMUM Kellogg.

LILIUM PARDALINUM Kellogg. A beautiful lily that seems to flourish in all soils and climates; a luxuriant grower and a profuse bloomer; the large, glowing yellow flowers spotted with brown, the tips of a fiery crimson, very variable in color, however, occurring in many forms.

Var. BOURGAEI. A surpassingly beautiful lily; lustrous, fiery red, large and drooping

LILIUM PARRYI Watson. A pretty and exceedingly rare lily, found in the mountains of Southern California and Arizona, named in honor of Dr. C. C. Parry. Produces lovely clusters of large and very fragrant flowers, of a clear lemon yellow, spiced with a delicious perfume.

LILIUM PARVUM Kellogg.
LILIUM ROEZLI Regel.
LILIUM RUBESCENS S. Watson.

LILIUM WASHINGTONIANUM Kellogg. A marvelously beautiful white lily of a waxy luster, and emitting a delightfully spicy perfume.

Genus CHLOROGALUM Kunth.

CHLOROGALUM ANGUSTIFOLIUM K.
CHLOROGALUM LEICHTLINII Baker.
CHLOROGALUM PARVIFLORUM S. W
CHLOROGALUM POMERIDIANUM Kt.

Genus ZYGADENUS Michx.

ZYGADENUS ANGUSTIFOLIUS. S. W.
ZYGADENUS ELEGANS Pursh.
ZYGADENUS FREMONTII Torr.
ZYGADENUS NUTTALLII A. Gray.
ZYGADENUS PANICULATUS S. Wat.
ZYGADENUS VENENOSUS S. Watson

Genus NOLINA Michx.

NOLINA BIGELOVII S. Watson.

NOLINA BIGELOVII Watson. Leaves flat, rough margined, an inch or more wide; with age attains a height of eight or ten feet; produces heavy panicles of small whitish flowers.

NOLINA PALMERI S. Watson.
NOLINA PARRYI S. Watson.

Genus YUCCA Linnaeus.

YUCCA ALOIFOLIA Linn.
YUCCA BREVIFOLIA Engelm.

YUCCA FILAMENTOSA Linn. "Adam's Needle;" produces tall spikes of snowy white, bell-shaped flowers; very beautiful, and furnishes a fiber of great strength.

YUCCA FILIFERA Chabaud. One of the tallest of the genus; flower stalk over 20 feet high, bearing a panicle of drooping, showy, white flowers.

YUCCA MACROCARPA Engelm.

YUCCA MOJAVENSIS Sargent.

The datile, or wild date, of the Mexicans, better known to Americans as the Spanish bayonet, Mexican dagger plant, wild banana, etc., occurs from the Mohave desert to the vicinity of San Quintin, Lower California, extending eastward through the arid regions of Arizona and Sonora, and perhaps to Texas. It attains almost tree-like proportions, and forms extensive forest-like plantations. Such a forest, when in full bloom, is a sight to be remembered. The large, waxy, bell-shaped flowers, of a creamy, sometimes marked with prune purple, are of surpassing beauty. The fruit does not seem to mature well near the coast. It is somewhat of the size and shape of a banana, of a sweetish taste, slightly reminding one of a fig. Near San Diego the plant is commonly under 8 feet in height; in the interior attains to 15 or 18 feet.

YUCCA VALIDA Brandegee.
YUCCA WHIPPLEI Torr.

Genus HESPEROCALLIS A. Gray.

HESPEROCALLIS UNDULATA A. Gray. The Lily of the Desert, growing in sandy washes on the Mohave and Colorado Deserts, in California. The lustrous waxy white flowers, shaded with green, very fragrant.

Genus VERATRUM Tournefort.

VERATRUM CALIFORNICUM Dur.

Genus BLOOMERIA Kellogg.

BLOOMERIA AUREA Kellogg.

BLOOMERIA CLEVELANDI S. Wats.

"Differing from B. aurea in the several very narrow leaves (1" wide or less), in the stouter scape (3-7' high), in having the thick and fleshy appendage at the base of the filament smooth instead of papillose, and obtuse at the summit instead of bicuspidate, and in the much shorter style, which is shorter than the ovary. On the mesas near San Diego, California; first collected by D. Cleveland, in 1874, and recently received from him and from C. R. Orcutt."—S. Watson, Proc. Am. Acad., xx. 376 (Feb. 21, 1885).

BLOOMERIA MONTANA Greene.

"Corm 1' broad: leaf solitary: scape 2° high, stout and scabrous: bracts numerous, lanceolate: pedicels 30-50 1-2' long: perianth rotate, 1' in diameter: appendage at base of filament 1" long, its lateral cusps subulate-filiform, ½ as long as the filaments: anthers linear, 1½" long, attached almost at the very base, but versatile."—Greene, Bull. Cal. Acad. Sci., ii. 10-11 (Dec. 14, 1885).

LEUCOCRINUM MONTANUM Nutt.

SMILACEAE.

Smilax californica G.

PONTEDERIACEAE.

Schollera graminifolia Hild.

ARACEAE.

Lysichiton kamtschatcensis Schott

TYPHACEAE.

Sparganium erycarpum E da 17?

Genus TYPHA Tournefort.

Typha angestifolia L da 17
TYPHA LATIFOLIA Linn.

LEMNACEAE.

Genus LEMNA Linnaeus.

LEMNA MINOR Linn.
LEMNA TRISULCA Linn.
LEMNA VALDIVIANA Phil.

NAIADACEAE.

LILAEA SUBULATA H. B. K.
ZANNICHELLIA PALUSTRIS Linn.
RUPPIA MARITIMA Linn.
Zostera marina L da 17

Genus NAIAS Linnaeus.

NAIAS MAJOR Allione.
Naias flexilis R & S da 17

Genus TRIGLOCHIN Linnaeus.

TRIGLOCHIN MARITIMUM Linn.

Genus POTAMOGETON Tournefort.

P pectinatus L da 17
POTAMOGETON LUCENS Linn.
POTAMOGETON NATANS Linn.
POTAMOGETON PUSILLUS Linn.

ALISMACEAE.

ECHINODORUS ROSTRATUS Engelm.
Sagittaria calycina E da 18

CYPERACEAE.

Genus CYPERUS Linnaeus.

CYPERUS ARISTATUS Rottb.
C diandrus Torr. v castaneus da 18
esculentus L da 18
CYPERUS LAEVIGATUS Linn.
CYPERUS MICHAUXIANUS Schult.
CYPERUS OCCIDENTALIS Torr.
C. VIRENS Michx.
2578 Near Calmalli, Mr. 10

Genus ELEOCHARIS R. Brown

E. ABENICOLA Torrey.
2577 Vulcan de las Tres Virgenes Mr. 13.
E. acicularis R Br.
E. capitata R. Br.
E. palustris R. Br

Genus SCIRPUS. Linnaeus.

SCIRPUS LACUSTRIS Linn.
v occidentalis Wat da 18
S maritimus L j da 18
ripa ius Sprong. j da 18
tavora nnth da 18
SCIRPUS SETACEUS Linn.
S. olneyi Gray.
S. sylvaticus L v. digynus Borck.
S. pungens Vahl

Genus HEMICARPHA Nees.

H. subsquarrosa Nees.
Cladium mariscus R Br v californicus Wat da 18

Genus CAREX Linnaeus.

C barbara Drew da 18
—filiformis L v latifolia Boeckl da 18
—marcida Bott da 18
—muricata L v ameri ana Bailey da 18
—multicaulis Bailey da 18
—laciniata Bott da 18
—pseu cyperus L v comosa Bott da 18
—spis-a B iley da 8
—angustata B ot 8
C. siccata Dewey, v. minor
C. triquetra Boott

JUNCACEAS.

Genus JUNCUS Linnaeus.

JUNCUS BALTICUS Willd.
JUNCUS BUFONIUS Linn.
JUNCUS DUBIUS Engelm.
J engelmann i Ord
JUNCUS LESUERII Boland.
JUNCUS LONGISTYLES Torr.
JUNCUS NUDOSUS Linn.
v megacephalu orr da 18
JUNCUS OXYMERIS Engelm.
JUNCUS PHAEOCEPHALUS Engelm.
—v glo eratus et v paniculatus E da 18
JUNCUS ROBUSTUS S. Watson.
JUNCUS XIPHIOIDES Mey.

PALMAE.

ARENGA SACCHARIFERA Labill. The Sugar Palm, of India; the juice is converted into toddy or sugar; the young kernels made with syrup into preserves. The pitch supplies sago, about 150 lbs. from a tree, according to Roxburgh.

ARTOCARPUS INTEGRIFOLIA Linn. The Jack Fruit, of the Malay Islands; attains a weight of 50 pounds.

CHAMAEROPS EXCELSA Thunb. The hardiest of all palms; had stood three degrees above zero F. without protection; beautiful fan-shaped leaves.

CHAMAEROPS HUMILIS Linn. The dwarf fan palm of southern Europe; very ornamental, and eligible for scenic effect; hardy.

Genus ERYTHEA S. Watson.

ERYTHEA ARMATA Watson. The beautiful Blue Palm, of Lower California; the fan-shaped leaves of a soft, glaucous color; the fruit is the size of a marble, and largely eaten by the Indians of the desert region where it grows wild.

The Tecos grandes is the fruit of the beautiful blue palm of Lower California, and forms an important article of food with the Indians, ripening in July and August. The fruit is the size of a common marble, with sweet meaty pulp surrounding the large stone ($2\frac{1}{2}$ inches in diameter). The tree grows 40 feet high, bearing its fan-shaped glaucous leaves in a very graceful manner. This palm was first found in the Cantillas canyon, Lower California, which opens out onto the Colorado derest, by Dr. Edward Palmer. Dr. J. N. Rose has since found it in Mexico, east of Mazatlan, I believe. The seeds require from six months to three years in which to germinate—the older seeds germinating more quickly than when fresh from the tree. I have had them germinate readily when over ten years old.

ERYTHEA EDULIS Watson. The Guadalupe Island Palm; "of equal decorative value

to Latania borbonica, much hardier, and of far more rapid development."

JUBAEA SPECTABILIS Humboldt. The tall and stout Coquito Palm of Chili; hardy; yields small edible kernels; a kind of treacle is obtained from the sap; leaves sometimes 10 ft. long.

OREODOXA REGIA Humboldt. The Royal Palm, "the Glory of the Mountains;" the grandest of the pinnate leaved palms.

PHŒNIX CANARIENSIS Hort

Elegant, most hardy, ornamental variety of date palm, much used for lawns in Southern California. ₱ 100 seeds 10c

PHŒNIX DACTYLIFERA Linnæus.

The well known date palm. ₱ 100 seeds, 50c.

PHŒNIX RECLINATA Jacquis.

Popular for out door planting

PTYCHOSPERMA ELEGANS Blume. Leaves 2 to 10 feet in length. widely known under the name of Seaforthia elegans, R. Br.

THRINAX ARGENTEA Lodd. One of the most elegant of fan palms, the under part of the leaves shining like satin; native of Panama.

Genus WASHINGTONIA Wendland.

"42. He unites the genus Myrrhis, Mx. with Cherophyllum; the Ch. claytoni of Persoon is however made a Scandix by Muhlenberg! which proves that it belongs to neither genera, but Myrrhis happens to be erroneous also, by being similar to Amyris, a previous genus, whence several names have been proposed for it. Washingtonia, Osmorhiza, Gonatherus; but these are not yet published; the second is perhaps the best."—"C. S. R[afin.]." in American monthly magazine, ii. 176 (1818). A Review of "Pursh's Flora of North America."

Britton and Brown deemed the above a sufficient publication to justify discarding the established name Osmorhiza later adopted by the writer of the above review -necessitating the coming of yet another name for our Californian genus of palms (Neowashingtonia).

Prof. C. S, Sargent considered the prior suggestion in a newspaper (Winsl. in California Farmer, Sept. 1854) of the name Washingtonia for Sequoia as insufficient cause for the abandonment of its use. The action of Britton and Brown seems even less justifiable and would cause the present writer to hesitate about accepting any changes proposed by them until after careful investigation of the need.

WASHINGTONIA SONORÆ Wat

"A tree reaching 75° in height & 8 ft in diam.: leaves 3 or 4° in diam., somewhat glaucous, very filiferous upon rather slender petioles which are armed with stout curved spines: spadix slender, 5 or 6° long: fr about 3/4 long. the flattened-globose seed 2–2½" in the longest diam. * * *—Wat pr am ac 24 79 31 Ja 1889 m j

WASHINGTONIA FILIFERA Wendl. The popular Californian fan palm; a hardy and magnificent species of the desert region of Southern California.

"The California fan palm, bearing great clusters of small black berries, the clusters weighing 10 to 20 pounds each, furnished the desert Indians with a most important article of food, equal to that of the pinon nuts to the mountain tribes, ranking next in value to the mesquite bean. The berries have a thin, very sweet, and pleasant flavored pulp, which any palate might appreciate.

WASHINGTONIA ROBUSTA Wendl.

A favorite strong-growing variety of filifers.

GRAMINEAE.

Genus ARISTIDA Linnaeus.

A. americana L f

—arizonica Vasey

—scabra Kunth

—divaricata HBK

A. DISPERSA Trin.

2561 Data as above, large fls., twisted awns.

2562 Same locality, March 11.

2563 Near Calmalli, Feb. 24.

2564 Same locality, Mar. 5.

2565 Near Vulcan de las Tres Virgenes, Mar.

A. bromoides HBK.

A. purpurea Nutt. var.

A. orcuttiana Vasey

A. CALIFORNICA Thurber.

2556 Valle de las Tres Virgenes, near Santa Rosalia; one of the common forage grasses. Mar. 13, 1899.

2557 Near Calmalli, not rare, March 3.

2558 Santo Domingo, February 20.

2559 Near Mission Santa Gertrudis Mar. 10

v fugitiva Vasey

v major Vasey

Genus SPOROBOLUS R. Brown.

S. HUMIFERUS HBK.

2579 Batamotal, near Guaymas, Sonora, Mr. 24.

S. ALTISSIMUS Vasey

"Culm 4–5° high, simple; leaves long, slender, becoming involute; panicle 6-8′ long, narrow the branches erect, scattered or partly verticillate, 3–4′ long, subdivided and flower-bearing from near the base; spikelets 1-flowered, about 1″ long; empty glumes unequal and nearly as in S. airoides—from which it differs in its greater height, and closer panicle, as well as in details of the fl. Collected at San Diego by Dr Edward Palmer."—Brandegee, Proc. Cal. Acad. II. ii. 212.

v. minor Vasey:—"Smaller, 2–3° high; leaves shorter; panicle 4–6′ long, purple;

spikelets rather smaller, San Enrique [Baja California],"—Brandegee, l. c. 213.

S. asperifolius Thurber
S. airoides Torrey
S. ramulosus Kunth.
S cryptandrus G
—depauperatus Torr
—Wrightii Munroe

Genus POLYPOGAN Desf.

P. monspeliensis Desf.
Hilaria rigida Thurber. Gietta grass.
Andropogon dissitiflorus Michx.
A. saccharoides Swartz
—cirrhatus Hack
—hirtiflorus Kunth
—macrourus Michx
—Wrightii Hackel
—sorghum Br da 20

Genus PHALARIS Linnaeus.

P. canariensis Linn.
P intermedia Bosc.
v angusta Chapm.
P arundinacea L
P lemmoni Vasey da 18
Epicampes rigens Bentham j da 20

Genus AVENA Linnaeus.

A barbata Brot
—fatua Linnæus
Deschampsia gracilis Vasey
D cæspitosa Beauv
D calycina J & C Presl da 19

Genus PASPALUM Linnaeus.

P, distichum Linnæus
P pubiflorum Rupt

Genus PANICUM Linnaeus.

P, urvilleanum Kunth,
P. capillare Linn
P. dichotomum Linnæus
P colonum L j da 18
P crus-galli L da 18
P sanguinale L da 18
Alopecurus geniculatus Linnæus
v aristulatus Torr
A californicus Vasey

Genus AGROSTIS Linnaeus.

multiculmis Vasey da 19
tenuis Vasey
pilosa Beauv
æquivalvis Trin
densiflora Vasey
diegoensis Vasey
asperifolia Trin?
exarata Trin. et var.
grandis Trin?
microphylla Steud. et var.
scabra Willd. var?
scouleri Trin?
verticillata Vill.
virescens HBK.

Genus POA Linnaeus.

POA ORCUTTIANA Vasey.

"Culms cæspitose, about 2° high, radical leaves numerous, narrow, flaccid, about 6′ long, scabrous; culm leaves 2–4 inches long, attenuate at the apex, and with the sheaths scabrous, upper sheath very long; ligule membranaceous, about 2″ long, acute, becoming lacerate; nodes smooth; panicle 4–5′ long, lax, the branches erect and somewhat appressed, the lower in threes, 1–3′ long, the lower third or more naked, numerously flowered above; empty glumes nearly equal, 1½″ long, the upper 3-nerved lower one-nerved, scarious margined; flowering glumes oblong, obtusish, flattish on the back, scabrous, about 2″ long scarious tipped, slightly pubescent below, five-nerved; palet as long as its glume, acute, ciliate scabrous on the keels. First collected by C. R. Orcutt near San Diego in 1884, and subsequently by Mr. Lorenzo Jared in Santa Barbara county, Cal. The mature spikelets have the appearance of Glyceria. Its narrow, scabrous leaves are good, distinctive characters."—Vasey, W. Am Sci. iii, 165, Ag. 1887.

P. ANNUA L.
P. ARIDA Vasey.
P BIGELOVII Vasey & Scribner.
P. FENDLERIANA Vasey.
P. HOWELLII Vasey & Scribner.
P. TENUIFOLIA Nutt.
v californica Vasey da 19
P UNILATERALIS Scribner.
P airoides Nutt da 19
—pauciflora Thurber da 19
—pratedsis L da 19

Genus ORCUTTIA Vasey.

O. CALIFORNICA Vasey.

Genus LAMARCKIA Moench.

L. AUREA Mœnch

Genus PHRAGMITES Trin.

P. COMMUNIS Trin.
P. VULGARIS B.

Genus TRICUSPIS Beauv.

T pulchella Torr. is Triodia p.
TRIODIA PULCHELLA HBK.

Genus DACTYLIS Linnaeus.

D glomerata L da 19

Genus KOELERIA Pers.

K cristata Pers da 19

Genus MELICA Linnaeus.

frutescens Scribner Or d
imperfecta Trin Or d, da 19
v flexuosa Bol da 19
v refracta Thurber da 19
poeoides Nutt
porteri Scribner

Genus DISTICHLIS Rafinesq.

spicata Ge ca ac b 2:415
maritima Rafin, da 19, is spicata
uniola

Genus BROMUS Linnaeus.

hookerianus Thurber da 19
carinatus H-A
ciliatus L da 19
erectus Huds
rigidus Roth
unioloides HBK
virens Buckl
maximus Desf da 19
rubens L da 19
mollis L da 19
BROMUS ORCUTTIANUS Vasey.

Vy bot gz 10:223 1885, Shear ag b 23; 42
Var. GRANDIS Shear ag b 23; 43

"A stout, erect ♃ 14–15 dm high very leafy below. Sheaths, leaves & culm pubescent throughout. Panicle about 2 dm long & nearly as broad at base at maturity when the branches are spread more or less horizontally. Spikelets pubesc nt throughout.* *" Or 472 d

Genus STIPA Linnaeus.

S. coronata Thurber
S. eminens Cav.
v andersoni Vy da 19
S. parishii Vasey
S setigera Presl.
S. speciosa T. & R.
S comata T.R
S hassei Vy
S occidentalis Thurber
S scribneri Vy
S viridula Trin da 19

Genus LOLIUM Linnaeus.

temulentum L da 19
v arvense With da 19
perenne L da 19

Genus HORDEUM Linnaeus.

jubatum L
murinum L
nodosum L
pratense Huds
pusillum Nutt

Genus ELYMUS Linnaeus.

americanus Vy
condensatus J & C Presl da 20
sitanion flchultes j, da 20
orcuttianus Vy da 20 Or d

Genus TRITICUM Linnaeus.

T repens L da 19

Genus PHLEUM Linnaeus.

P pratense L da 18

Genus CALAMAGROSTIS Adans.

densus Vy
kœlerioides Vy
robusta & orcuttii ined Or d

Genus CINNA Linnaeus.

macroura Kunth

Genus BOUTELOUA Lagasca.

B. ARISTIDOIDES Thurb.

2567 Near Mission Santa Gertrudis, Mar. 10.

bromoides Lag
burkei Scribner
eriopoda Torrey
havardi Vy
oligostachya Torrey
polystachya Torrey Or e
racemosa Lag
ramosa Scribner
rothrockii Vy

Genus MUHLENBERGIA Trin.

M. pungens Thurber
M. DEBILIS Trin.

2568 Data as above.
2569 Same vicinity, Mr. 11.
2570 Near Calmalli, Mr. 1.
2571 Valle de las Tres Virgenes, Mr. 14.

—calamagrostidea Kunth
—californica Vy
—dumosa Scribner
—gracilis Trin
—parishii Vy

Genus FESTUCA Linnaeus.

myurus L sz. da 19
pseudomyurus S
tenella Willd da 19
arizonica Vy
microstachys Nutt et v ciliata G
multicaulis Vy, da 19
elatior L v pratensis da 19
F. OCTOFLORA Walt. var.

2572 Near Mission Santa Gertrudis, Mr. 10.

CENCHRUS PALMERI Vasey.
2573 Near Calmalli, F. 24, not rare.
P·PPOPHORUM WRIGHTII Watson.
2574 Near Calmalli, common on rocky slope, Mr. 3.
ERAGROSTIS MAJOR Host.
2575 Valle de las Tres Virgenes, Mr. 14.
E neo-mexicana Vy
E orcuttiana Vy
E oxylepis Torrey
E poaeoides Beauv. da 19 et v megastachya G.
Eriocoma cuspidata Nutt., da 19, is Oryzopsis m
Oryzopsis membranacea Vy
Monantho eloe littoralis a Ord, da 20
Eriochloa punctata Ham
Gastridium australe Beauv
Glyceria remota Fries
—pauciflora Presl
Hilaria cenchroides HBK
—jamesii Benth
Lepturus paniculatus Futt., da 19
Leptochloa imbricata Thurber da 19
Imperrtor hookeri Rupr
Ægopogon geminiflorus HBK
Agropyrum divergens Nees
—glaucum R-S
—repens Beauv sz
—tenerum Vy
Arundo donax L da 19
Atropis nevadensis Vy
Bachloe dactyloides E
Cenchrus tribuloides L
Chloris elegans HBK
Cynodon dactylon Pers
Danthonia californica Bolander da 19
Diplachne imbricata Scribner
—viscida Scribner
Eatonia obtusata G
Pleuraphis rigida Thurb., da 19 is Hilaria r.
Sorghum halepense Pers
Spartina stricta Roth da 19
Setaria glauca Beauv da 18
Stenocoelos californica Nutt
Uniola palmeri Vy j
Triticum barbarum Steud. Ord
—californicum Vy
—elongatum Hackel
—spicatum Richter

EQUISETACEAE.

EQUISETUM ROBUSTUM Al. Br.
EQUISETUM TELMATEIA Erh.

OPHIOGLOSSACEAE.

Genus OPHIOGLOSSUM Linnaeus.

OPHIOGLOSSUM NUDICAULE Linn. f.

FILICES.

Genus POLYPODIUM Linnaeus.

POLYPODIUM CALIFORNICUM Kaulf.

Genus GYMNOGRAMME Desv.

GYMNOGRAMME TRIANGULARIS Klf.

Genus NOTHOLAENA R. Brown.

NOTHOLAENA CALIFORNICA Eaton.
NOTHOLAENA NEWBERRYI Eaton.
NOTHOLAENA PARRYI Eaton.

Genus CHEILANTHES Swartz.

CHEILANTHES CALIFORNICA Mett.
CHEILANTHES CLEVELANDI Eaton.
CHEILANTHES COOPERAE Eaton.
CHEILANTHES FIBRILLOSA Davnpt.
CHEILANTHES MYRIOPHYLLA Desv.
CHEILANTHES PARISHII Davenport.
CHEILANTHES VISCIDA Davenport.

Genus PELLAEA Link.

PELLAEA ANDROMEDAEFOLIA Fee.
PELLAEA ORNITHOPUS Hook.
PELLAEA WRIGHTIANA Hook.

Genus PTERIS Linnaeus.

PTERIS AQUILINA Linn.

Genus ADIANTUM Linnaeus.

ADIANTUM CAPILLIS-VENERIS Linn.
ADIANTUM EMARGINATUM Hook.
ADIANTUM PEDATUM Linn.

Genus WOODWARDIA Smith.

WOODWARDIA RADICANS Smith.

Chain fern; fronds 4–8° high, not rare along perennial streams.

Genus ASPLENIUM Linnaeus.

ASPLENIUM FILIX-FOEMINA Bernh.
ASPLENIUM TRICHOMANES Linn.

Var. incisum Moore. Feather fern.

Genus ASPIDIUM Swartz.

ASPIDIUM ARGUTUM Eaton.
ASPIDIUM MUNITUM Kaulf.

Genus PHEGOPTERIS Fee.

CYSTOPTERIS FRAGILIS Bernh.

Bladder fern; Europe, Asia, New Zealand, Hawaian Islands, etc

Genus WOODSIA R. Brown.

W. Oregana Eaton.
Southern California.—Parish, no. 1775.
W. Mexicana
Monntains Baja California.—Orcutt

SELAGINELLEAE.

Genus SELAGINELLA Beauvois.

SELAGINELLA RUPESTRIS Spring.

Abundant in several forms.

Genus ISOETES Linnaeus.

I. mexicana Underwood, Bot. Gaz.
San Diego mesas; near Santo Tomas, Baja Cal.—Orcutt.
I. orcuttii A. A. Eaton, ined.
San Diego mesas.—Orcutt.

MARSILIACEAE.

Genus MARSILIA Linnaeus.

MARSILIA VESTITA H. & G.

Genus PILULARIA Linnaeus.

PILULARIA AMERICANA Al. Br.

SALVINIACEAE.

Genus AZOLLA Lam.

AZOLLA CAROLINIANA Willd.

Throughout North and South America, floating on quiet waters.

CHARACEAE.

CHARA FOETIDA Al. Br.

Very abdndant in pools from coast to desert.

LICHENES.

Lichens. These diminutive plants are found in a great variety of forms and in abundance in the vicinity of San Diego, and southward along the coast of Baja California The shrubs and bushes are often covered, especially in the vicinity of the sea where subjected to the influence of frequent fogs or moist ocean breezes.

Euphorbia misera, species of Atriplex, Lycium, and other genera are thus decorated, - the trunks and branches with the microscopic fruits of Lecanora and still more inconspicuous genera, while the tops are festooned and often almost concealed by the luxuriant growth of foliaceous species, Ramalina, Roccella, &c.

The mesas around San Diego are prolific in earth forms, the hard sun-baked ground being largely colored with the bright red, yellow, black, or white fruits and thalli of Biatora, Rinodina, &c.

The pebbles and boulders freely scattered over these mesas (and these remarks apply with equal force to the mesas of Baja California, at least as far as Lagoon Head) are also brightly colored with the thick red fruits of Placodium bolacinum, the black specks known as Verrucaria nigrescens, with the large black fruit of Lecanora atra with its broad white thallus, or with various broad patches of some foliaceous species —white, yellow, brown, or of some other tint or shade that harmonizes with its surroundings, —contrasting pleasantly with the reddish brown earth or the grey colored stones upon which they are comfortably seated.

The weather-stained shingles that Stockton used to roof the old mission of San Diego were highly colored with the commoner species of lichens when I first knew that historic edifice. Other roofs and fences of more recent origin are similarly decorated, and often prove of great attraction to the botanist as furnishing data relative to their rapidity of growth.

The humble home of the trap-door spider (Cteniza californica), securely closed by a neat fitting door, tightly held against possible intruders, is often found further concealed by a luxuriant growth of lichens. Whether the sagacious lady of the nonse is to be credited with their transplanting, as is claimed by some naturalists, or whether they themselves selected the site of their abode, and reached full maturity after the spider's house was built, are questions which it would be interesting to have settled.

Turning away from the close proximity of the sea, we find the rocks in the rugged canyons which break through the foothills covered with a multitude of equally bright and pretty lichens, which often actually lend color to the whole landscape. Thus the rocks at the head of the celebrated Cantillas canyon, in northern Baja California, are rich yellow, while the rocks in the San Telmo canyon, near San Quintin, Lower California, are white with lichens—whitened as if they had been haunted by sea fowl for centuries!

Roccella tinctoria DC.
R. leucophæa Tuckerman
R. phycopsis Ach.
R. fuciformis (L.) Ach.
Ramalina ceruchis De Not.
R.homalea Ach.
R. reticulata Krempell
R. linearis Linn. f.
R. complanata Ach.
R. menziesii Tuckerman
R. calicaris Fr.
v. farinacea Schaer.
R. crinita Tuckerman, Bull. Too. Cl.
Evernia vulpina Ach.
E. prunastri Ach.
Usnea barbata Fr.
v. hirta Fr.
v. rubiginea Michoe.
U. jubata Fr.
U. ochroleuca Fr.
Theloschistes chrysopthalmus Norm.
v. flavicans Wallr.
T. parietinus Norm.
v. polycarpus Tuckerman
Parmelia perforata Ach.
P. physodes Ach.
P. conspersa Ach.

Physcia erymacea Tuckerman
P. olivacea Ach.
P tribacea Tuckerman
P. stellaris Linn
v. hispida Schreb.
Placodium coralloides Tuckerman
—murorum DC.
—bolacinum Tuckerman
—cinnabarinum Ach.
—cerinum Hedw.
—ferrugineum Huds.
—fulgens DC.
—luteominimum Tuckerman
—aurantiacum N. & H.
Heppia despreauxii Mont.
Rinodina radiata Tuckerman
R bolodes Tuckerman
Pertusaria flavicunda Tuckerman
Urceolaria scruposa Smf.
Stereocaulon albicans Nyl.
Cladonia fimbriata Fr.
C pyxidata Fr.
Lecidea cruciaria Tuckerman
Buellia sidalea Tuckerman
B myriocarpa DC
Lecanora bolanderi Tuckerman
L. haydeni Tuckerman
L. muralis Schaer.
L. pinguis Tuckerman
L. pa lida Schaer.
L cenisia Ach
L subfusca L
L atra Hudson
L pacifica Tuckerman
L cinerea L
Stylographa parallela Nyl.
Chiodecton ephærotum Tuckerman
Arthonia epigina Tuckerman
Acolium bolanderi Tuckerman
A stijacobi Tuckerman
Endocarpon pusillus Hedw.

☞Omitted from page 58:—

Larrea Mexicana Moricand.—The grease wood of the Rocky mountain region is very widely distributed. from Texas to California, and is known under a variety of names—perhaps best known as creosote bush, from the unpleasant tarry odor which it exhales. "It is principally used in rheumatic affections by the Mexicans, who bathe in an infusion of the branchlets and leaves" (fide Havard), and is said to make a most excellent liniment for use of man or beast, quickly healing cuts and sores. See Proc. U. S. Nat. Mus. VIII. 514.

☞Omitted from page 59:—

Rhamnus purshiana DC.—Among the native remedial agents most extensively employed in California is this species, which is found only in limited quantity in Southern California. Prof. H. C. Ford records it from the Santa Ynez mountains, and Mrs. R. F. Bingham notes it among the "Medicinal plants growing wild in Santa Barbara and vicinity" (vide Bull. S. B. Soc. Nat. Hist., i. 2, pp. 30-34). Dr. H. H. Rusby (Druggists' Bull. IV. 334), calls attention to the difficulty of positively identifying and distinguishing this species from its near relative, R. californica, in its southern habitat, where the two are usually associated together and recommends that this important drug, Cascara Sagrada as it is called, should be collected only in northern California or Oregon to avoid all risks of obtaining spurious bark.

FUNGI.

No even approximately complete list can be presented

Peziza scutulata L. On Cuyamaca mt., d
Peridermium ephedræ Ckl. On Ephedra californica, j
Uredo e i comæ E & E
Æcidium tissæ E & E

ALGAE.

In the check-list of 1885 appeared a list of the marine algæ collected by D. Cleveland; names in that list are here indicated by the letter c; this has been added to by Mrs. Mary S. Snyder, shown by the letter s; but doubtless more of the old names are synonyms than here indicated, as the late literature is not accessible to the writer.

Agardhrella coulteri Harv. s?
Ahnfeltia concinna J Ag s
—gigartinoides Ag. c—is concinna.
—plicata Fr. c
Amphiroa aspergillum J E Gray s

—cretacea —— c
—nodulasa Kutz s
—orbigniana Harv. c s
Andersoniella farlowii Schmitz s
Antithamnion floccosum pacificum Hv s
Arthrocladia———? c
Asperococcus sinuosus Bory. c—is Colpomenia sinuosa
Bangia fusco-purpurea Syng s
Bryopsis plumosa Lmx. c s
Callithamnion americanum Harv. c
—dasyoides Ag. c s
—heteromorphum J. Ag. c
—lejolisea Farlow. c
—scopulorum c
Callimenia californica Farlow s
Callophyllis centrocarpa c
—furcata Farlow s
—gracillarioides Farlow. c s
—laciniata Kutz. c s
—obtusifolia Ag. c
—variegata Kut. c s
Ceramium californicum J Ag s
—codicola J Ag s
—rubrum Ag. c is v pacificum Col. s
Centroceras clavulatum Mont s
—eatonianum Farlow s
Ceratothamnion pikeanum s
Chætomorpha ærea Dillw. c s
—californica Collins s
—clavata c; v torta Farlow s
Chondria atropurpurea Harv. c
—nidifica Harv s
—tenuissima californica Collins s
Chondrus affinis Harv. c s
—canaliculatus Ag. c s
Chrysemenia obovata c =
—pseudodichotoma Farlow s
Cladophora ecklonii c
—hutchinsæ Farlow
—membranacea Ag. c
—stimpsoni s
Codium tomentosum Stack. c
—lindenbergi Ag s
—mucronatum californicum J Ag s
Coilodesma californica Ky s
Corallina officinalis Linn. c and —squamata Ellis & Sol. c are chilensis Desem [s] v californica.
—crassa collins s
—gracilis Lamour s
Cordylecladia conferta Mont. c s
Colpomenia sinuosa Derb & Sol s.
—tuberculata Saunders s
—expansa Saunders s
Cruoria purpurea Crn. c
Cryptonemia crenulata Ag. c
—dichotoma J. Ag. c
—obovata Ag. c s
Cystosiera osmundacea Ag s
Dasya helenæ Farlow c
—pacifica Harv s
—subsecunda Suhr. c s
Delessiria quercifolia Bory. c
Derbesia tenuissima Cronan s
Desmarestia ligulata Lmx. c s
—var. herbacea c
Dictyota kunthii Ag. c is binghamiæ J Ag. s
Dictyopteris bonarioides Farlow s
Ectocarpus crinitus Harv. c
—fasciculatus Ag. c
—granulosus Ag. c
—siliculosus Lyng. c
—virescens Thurst. c
—confervoides Le Jol s
v pygmæus Kg s
—mitchellæ s
Egregia menziesii Aresch. c
—lævigata Setchell s
Eisenia arborea Aresch. c s
Endocladia muricata J. Ag. c s
Entromorpha compressa Grev c
—intestinalis Lmx. c
—flexuosa s
Farlowia compressa J. Ag. c
Fucus fastigiatus Ag. c
—harveyanus Desem s
—vesiculosus Linn. c
Gelidium carneum Lmx. c is amansii Lam s
—australe s
—cartilagineum Grev. c s
—coulteri Harv. c s
—crinale Ag. c

v spathulatum Hauck s
Gigartina canaliculata Harv. c s
—mammillosa Ag. c
—microphylla Harv. c
—var. horrida Farlow c is radula forma horrida Farlow
—pistillata Ag. c
—radula Ag. c s
forma horrida Farlow
forma microphylla s
—spinosa Harv. c s
—horrida Farlow s
—jardini J Ag s
—papillata formæ cristata et dissecta s
Gracillaria confervoides Grev. c
—multipartita Ag. c
Grateloupia cutleriæ Kutz. c
Gymnogongrus leptophyllus Ag. c
—linearis Ag. c
Halidrys osmundacea Harv. c is Cystosiera osmundacea.
Helminthocladia purpurascens J Ag s
Herposiphonia villum J Ag s
Hypnea divaricata Grev. c
—musciformis Lmx. c s
—adunca J Ag s
—crinalis Harv s
Iridæa minor Bory. c
—laminarioides Bory s
Jania rubens Lmx. [illegible] corallina crassa.
Laminaria farlowii Setchell s
Laurencia cervicornis Harv. c
—pinnatifida Lmx. c s
—virgata J. Ag. c s
—paniculata s
—papillo-o Grev s
Leathesia tuberi[illegible] Gray c
Lithothamnion p[illegible] Aresch c
Lithothrix asperg[illegible] Gray c is Amphiroa aspergillum.
Lomentaria ovali[illegible]eri Harv c
Lophosiphonia cl[illegible] s
Macrocystis pyrifer[illegible] c s
Melobesia ample[illegible] c
—lenormandi A[illegible] c
—membranacea [illegible] c
Microcladia califor[illegible] c
—coulteri Harv. c s
Nemalion andersonii Farlow s
Nemastoma californica Farlow s
Nereocystis gigantea Aresch s
Nereocystis lutkeana Post & Rupr. c
Nitrophyllum andersonii Ag. c s
—latissima Ag s
—ruprechtianum Ag. c s
—violaceum Ag. c s
Ophidocladus simpliciusculus s
Palmella crassa Ag. c
Pelvetia fastigiatus Deseve & Thua s
Phylletis fascia Knetz s
Petrospongium berkleyi Nally. c
Peys onnellia atropurpurea Crn. c
—dubyi Crn. c
—squamaria Dec. c
Phyllophora clevelandii Farlow c s
Phpllosphora menziesii Ag s
Pikea californica Harv. c s
—clevelandii Farlow c
Plocamium coccineum Lyng. c s
—var californicum c
— —flexuosum c
— —sinuosum c
—violaceum Farlow c s
Polypes bushiæ Farlow s
Poganophora californica s
Polysiphonia baileyi Ag. c is Ptersiphonia baileyi.
—bipinnata Post & Rupr. c is Ptersiphonia bipinnata
—californica Harv. c is Pterosiphonia c.
—clevelandi Farlow c s
—collabeus s
—dictyurus J. Ag. c
—parasitica Grev. c
—var. dendroidea Ag. c s
—pinnata Ag. c s
—senticulosa Harv. c s
—urceolata Grev. c
—verticillata Harv. c s
—villum Ag. c is Herposiphonia villum.
Porphyra vulgaris Ag. c is perforata v
—naiadum Anderson s
—nereocystis Annerson s
—perforata forma segregata s
Prionitis andersonii Eaton c is segregata
—clevelandii Farlow c

—lanceolata Harv. c s
—decipiens s
—lyallii forma gladiata Setchell s
Pterodophora californica Rupr. s
Pterosiphon a baileyi J Ag s
—woodii Harv s
—clevelandii s
—parasitica dendroidea s
Pterygophora californica Rupr. c
Ptilota densa Ag. c s
—hypnoides Harv. c
Ralfsia verrucosa Aresch. c
Rhadomela larix Ag. c
—subfusca Ag. c
Rhabdonia coulteri Harv. c s
Rhodochiton floridulum Noy s
Rhodymenia corallina Grev, c s
—flabellifolia (Bory) Ag. c
—palmata Grev. c s
Riccardia montagnei Derb. & Sol., var. gigantea Farlow. c s
Sarcophyllis californica J Ag s
Sargassum agardhianum Farlow c s
—heterocystum Ag. c
—piluliferum Ag s
Schizymenia coccinea Harv. c is Sarcophyllis californica
Scinaria furcellata Bivona s
var. undulata Farlow c
Scytosiphon lomentarius Ag. c s
Spermothamnium roseum Aresch. c is snyderæ Farlow s
Sphacelaria cirrhosa Ag. c
—fusca Ag. c
—tribuloides Mengh s
Spyridia filamentosa Harv. c s
Stennogramme interrupta Mont. c s
Sterrocolax decipiens Schmitz s
Tænioma clevelandii Farlow c
Taonia lennebackeræ Farlow s
Ulva lactuca Linn. c s
—californica Wille s
—enteromorpha Tepolis s
—fasciata Delile s
—latissima Ag. c
—linza Auct. c
Zonaria flava Ag. c
—tournefortii Lmx. c s

ABBREVIATIONS, SIGNS AND BIBLIOGRAPHY.

A=America
ac—academy
aes—agricultural experiment station
Ag—August
Am—American
Ap—April

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C—Daniel Cleveland
Ca—Alta, or Upper California

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e—Colorado desert, d

E-B—E et J M Bigelow

F—February

f—figure

Fr—
FOERSTER, CARL FRIEDRICH:
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fl—flower

fr—fruit

ft—feet

G—Asa Gray

Ge—Edward Lee Greene

h—Colorado deser., Riverside county

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hb—herbarium

He—A Arthur Heller: cat N A plants.

Hm—

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J—journal

j—Baja or Lower California

Ja—January

Je—June

Jl—July

KBr—Katharine Brandegee

Kg—Albert Kellogg

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Mr—March

My—May

N—November

n—New Mexico, north, new

Na—National

O—October

o—Oregon

Or— [W]

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p—pages, purple

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pr—proceedings

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Py—Charles Christopher Parry

q—Mohave desert, b

r—report

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S - September

s—vicinity of San Diego, Ca

Sm—

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sr—series

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t—plate

Tr—

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Vy—George Vasey

W—West Am Scientist

w—Washington, west, white

Wat—[bot Ca]

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y—yellow

z—Arizona

ZUCCARINI, JOS. GERH.:
—Plantarum vel minus cognitarum, que in Horto botanico herbarioque regis monacensi servantur
Fasc. III. Cacteæ. 597-742. (5 pl.).

°—feet

℘—perennial

@—annual

£—ligneous or woody

′—inches

″—lines, 12 to an inch

¶—introduced or naturalized

– to

☞Omitted from page 61:—

SCHINUS MOLLE Linnaeus. The Peruvian, or Mexican, Pepper tree, one of the most graceful and popular of ornamental trees in California; with pendant, fern-like, foliage, and bearing clusters of beautiful rosy-red berries.

The Botany of California, finished by Sereno Watson and published in 1880, through the generosity of gentlemen of a past generation, uniform with and as a part of the state geological survey publications, marked the commencement of a new era of botanical activity on the Pacific coast. The next decade saw many additions to the state flora through the labors of a group of collectors who assiduously explored mountain and desert regions alike. In 1879 Heman Chandler Orcutt moved with his family from the Green Mountain state to San Diego, and took part in this work of exploration, which only ended with his life in 1892

Parry, Pringle, the Parish Brothers, Palmer and many others were especially active, with Gray Greene, Brandegee Watson and Vasey as the principal writers on their field work.

The last decade of the 19th century is noteworthy for the attempted changes in nomenclature as proposed by Kuntze, followed by Coville, Greene, Britton and other, mostly the younger, botanical authors.

In the present work the writer avoids the adoption of the most of the proposed changes, aiming to make it a supplement to Watson's great work—with this in view reproducing descriptions of species discovered since 1880 Notes and descriptions of all the plants would have been added but for the expense.

Omitted from page 46:

Paeonia Californica Nutt.—The root of the "Pionia" is considered valuable by the natives for the healing of sores on man or beast.

Omitted from page 54:

Krameria Parvifolia Bentham. Krameria Canescens Gray.—These small bushes contain tannin and may be found useful medicinal plants (fide Havard), and are not rare on the borders of the Colorado desert in Southern and Baja California, eastward to Texas, and into Mexico.

In the Mission days of California, the Jesuite and Franciscan fathers and the early settlers found it necessary to rely upon their own resources and to become proficient in many trades and professions which in a more advanced stage of civilization are relegated to specialists. Medicine and surgery were sciences which naturally demanded the attention of every one, especially of the fathers who were virtually entrusted with both the spiritual and physical welfare of these primitive communities. At times, doubtless their limited stock of simple remedies ran low, and with the slow means of communication with other communities, and with Mexico and Spain, whence they drew their earlier supplies, they gladly availed themselves of the traditional knowledge of the virtues of native plants which obtained among the Indian population around them.

Among the Californian aborigines, as among most tribes of Indians, there existed so-called medicine men or doctors, who, by practicing on the superstitions of their fellows, and with the aid of their traditional knowledge of the virtues of certain plants—handed down from generation to generation of medicine men—followed with greater or less success the healing art.

Local remedies, however, are known and used every where in all climes and among all conditions of people, and unquestionably the simple formulae, comprised of harmless vegetable ingredients, as practiced among a normally healthful rural community, are more successful in the average cases, than the complicated combinations of poisons administered by the old school physician.

ALOE VARIEGATA Linnaeus. An African plant of great beauty, producing spikes of brilliant coral red flowers. It is found in many old-fashioned gardens and receives its common name from the feathery mottling of the leaves.

MAGNOLIA GRANDIFLORA Linnaeus. A beautiful flowering evergreen tree.

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